

October 12, 2017

Mr. Dean Ericson ETC Field Services LLC 600 N. Marienfeld Suite 700 Midland, TX 79701 **APPROVED** By Olivia Yu at 8:01 am, Apr 02, 2018

NMOCD approves of the delineation and remediation completed for 1RP-4524 and grants backfill approval for the excavated area. Area for deferral is appended to the email from 19 March 2018.

Reference No. 11135250-4

Dear Mr. Ericson:

Re: Remediation Summary Report Trunk MC-16 inch ETC Field Services LLC 1RP-4524 Site Location: Unit O, Sec. 33, T 21-S, R 36-E (Lat 32.428160N°, Long -103.269760W°) Lea County, New Mexico

GHD Services, Inc. (GHD) is pleased to present this report for the above referenced site. The Trunk MC-16 inch (hereafter referred to as the "Site") is located within Unit O, Section 33, Township 21 South, Range 36 East, in Lea County, New Mexico (see Figure 1). The site is owned by the New Mexico State Land Office.

On November 17, 2016, a release of approximately six barrels (bbls) of natural gas/condensate was reported to the State of New Mexico Oil Conservation Division (NMOCD) via Form C-141. A leaking 16-inch gathering system pipeline was the cause of the release. Contaminated soils were excavated and stockpiled on site (see Figure 2). NMOCD release number 1RP 4524 was assigned.

1. Recommended Remediation Action Limits

Based on information available from the New Mexico Office of the State Engineer New Mexico Water Rights Reporting System website, the closest well with a recorded depth to water measurement is approximately 1 mile from the site. The depth to groundwater measured in this well was 212 feet (ft.) below ground surface (bgs).

Based on information available from the United States Geologic Survey National Water Information System, the depth to groundwater at the Site is approximately 200 ft. bgs. This is based on a water well that is located approximately 0.65 mile east, southeast of the Site (see Appendix A, Water Well Reports for depth to water). Additionally, there are no well head protection areas or surface water bodies within 1,000 ft. of the Site. Therefore, the preliminary total ranking score is 0 (see table below).





Based on this score, the applicable NMOCD Site specific Recommended Remediation Action Limits (RRALs) are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX), 5,000 mg/kg for total petroleum hydrocarbons (TPH), and 600 mg/kg for chlorides.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (>100 ft. bgs)	0
Wellhead Protection Area (> 1000 ft. from water source, > 200 ft. from domestic source)	0
Distance to Surface Body Water (>1000 ft.)	0
Ranking Criteria Total Score	0*
*Resource the replying oritoric total ecore is 0 NMOCD established DDALe are 10 mg/kg	forbonzono

*Because the ranking criteria total score is 0, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 5,000 mg/kg for total TPH and 600 ppm for chlorides¹.

1. NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993 and recent discussions with Mr. Jim Griswold with the NMOCD.

2. Assessment Activities

The impacted area had initially been excavated to a depth of approximately 10 ft. bgs and soil samples were collected by ETC Field Services LLC personnel for laboratory analysis. A sample (BtmHol) was collected from the bottom of the excavation at a depth of approximately 10 ft. bgs on November 7, 2016. The sample was submitted to Xenco Laboratories (Xenco) in Midland, Texas and analyzed for toxicity characteristic leaching procedure (TCLP) BTEX by EPA Method 8260B, TPH by EPA Method 8015B, and chloride by EPA Method 300. The analytical results for this sample were:

- TCLP Benzene: <0.005 milligrams per liter (mg/L)
- Total TCLP BTEX: 0.118 mg/L
- TPH: 15,960 milligrams per kilogram (mg/kg)
- Chloride: 416 mg/kg

Excavation activities to assess the horizontal and vertical extent of impacted soil occurred on July 5, 2017 by GHD. Field screening of soil for petroleum hydrocarbons and chloride was performed to assess the horizontal and vertical extent of contaminated soil in the release area. Field screening of the soil was performed using the PetroFLAG Hydrocarbon Analysis System and a Hach chloride field kit. Test pits (TP-1 through TP-5) were excavated on each side, both ends, and the base of the original excavation (Figure 2). Excavation activities were performed by Diamond Back of Hobbs, New Mexico and observed by GHD. The field screening indicated that impacted soil did not extend to a depth greater than 15 ft. bgs.

Once field screening indicated soil concentrations were near or below the RRALs, soil samples were collected and submitted to Hall Environmental Analysis Laboratory (HEAL) located in Albuquerque, New



Mexico for analysis. The soil samples were analyzed for BTEX by EPA Method 8260B, TPH by EPA Method 8015 full range, and chlorides by EPA Method 300.0 (Table 1).

One sample was collected from the test pit in the base of the excavation (TP-5) at a depth of 16 ft. bgs. Soil samples were also collected for laboratory analysis from four test pits (TP-1 through TP-4) at depths ranging from 4 to 10 ft. bgs.

One sample collected from TP-1 at a depth of 10 ft. bgs contained a benzene concentration of 5 mg/kg and a total BTEX concentration of 93 mg/kg. None of the other submitted samples contained concentrations above the laboratory reporting limits for BTEX. TPH concentrations ranged from below the laboratory reporting limit to 16,590 mg/kg. The highest concentration was found in the sample collected from TP-1 at a depth of 10 ft. bgs. Chloride concentrations ranged from below the laboratory reporting limit to 320 mg/kg, all below the RRAL.

Test pit TP-1 was excavated to the north of the initial release area where there are several buried pipelines. The Fullerton 6-inch and Fullerton 16-inch pipelines both run perpendicular to the Trunk MC-16 inch pipeline. Due to the proximity to these lines, further excavation was not performed in this area.

GHD performed additional soil excavation and assessment sampling on September 5 and 6, 2017. The additional excavation included advancing five additional test pits (TP-6b, TP-7a, TP-8, TP-9c, and TP-10) to the east of the Trunk MC-16 pipeline (Figure 2).

3. Summary and Recommendations

Confirmatory soil samples were collected from the bottom and sidewalls of the release area (see Figure 2) and submitted for laboratory analysis. Based on the laboratory results, the vertical extent of impacted soil has been assessed to below the RRALs. The horizontal extent to the east, south, and west have been assessed to below RRALs. However, BTEX and TPH concentrations on the north end of the excavation, observed in TP-1, are above the RRAL. Additional excavation to the north was prevented due to the presence of several active pipelines.

Based on this and the proximity of the Trunk MC-16 inch pipeline to two other pipelines in this area, GHD recommends the following:

- Request a variance from the NMOCD and the New Mexico State Land Office to leave the impacted soil in place in the area of the pipelines until these pipelines have been abandoned.
- The excavation should be backfilled with clean fill material and wheel compacted to grade.

Following completion of the backfilling, revegetation of the site will be performed. Disturbed areas associated with the remediation efforts will be re-seeded. If after one growing season the vegetation has not taken hold, seeding may need to be repeated until revegetation is successful, as determined by the



State Land Office. The seed will be planted utilizing a drill. The proposed seed mix will consist of Bureau of Land Management mix #2 without love grass.

The site will be visited on a quarterly basis to assess the establishment of vegetative growth. Staff personnel performing the site visit will also look for the presence of noxious weeds at the site as indicated on the New Mexico Noxious Weeds List specified on the United States Department of Agriculture website. If a noxious weed is observed at the site, the New Mexico State Land Office will be contacted to determine the most effective manner to eradicate it.

Following completion of the above activities, a request for no further action will be made for the Site. Should you have any questions, or require additional information regarding this submittal, please feel free to contact myself or Bernie Bockisch at (505) 884-0672 or Bernard.Bockisch@ghd.com.

Sincerely,

GHD

AIC Brand

Alan Brandon Senior Project Manager

AB/mc/01

Bernard Bockisch New Mexico Operations Manager

Figures



CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135250-ETC Field Services\11135250-04(000)GN-DL001.dwg



CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135250-ETC Field Services\11135250-04(000)GN-DL001.dwg

Tables

Table 1

ETC Field Services LLC - Trunk MC-16 Section 33, Township 21 South, Range 36 East Lea County, New Mexico Soil Analytical Results Summary

Sample ID	Date	Sample Depth	Chlorides	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	ТРН	ТРН	ТРН	Total TPH
		(ft.)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	GRO (C6-C-10)	DRO (C10-C28)	EXT DRO (C28- C36)	GRO/DRO
									(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD Remediatio	n Action Levels		600	10	NE	NE	NE	50	NE	NE	NE	5,000
	EXCAVATION SAMPLES											
WstPile*	11/07/2016		308	0.00535*	0.0539*	0.101*	0.843*	0.902*	2,230	7,630	NA	9,860
BtmHol*	11/07/2016	10	416	<0.00500*	<0.00500*	<0.00500*	0.118*	0.118*	4,160	11,800	NA	15,960
S-wal*	11/07/2016	10	324	<0.00500*	0.0362*	0.0239*	0.341*	0.401*	3,710	12,700	NA	16,410
11135250-04-070517-MG-TP-1-10'	07/05/2017	10	320	5.0	24	20	44	93	790	8,900	6,900	16,590
11135250-04-070517-MG-TP-2-4'	07/05/2017	4	<30	< 0.025	< 0.050	<0.050	< 0.099	<0.224	<5.0	<9.8	<49	<63.8
11135250-04-070517-MG-TP-3-10'	07/05/2017	10	110	< 0.024	<0.048	<0.048	< 0.096	<0.216	<4.8	35	<49	35
11135250-04-070517-MG-TP-4-10'	07/05/2017	10	64	< 0.024	<0.048	<0.048	< 0.096	<0.216	<4.8	<9.7	<48	<62.5
11135250-04-070517-MG-TP-5-16'	07/05/2017	16	230	< 0.023	< 0.047	<0.047	< 0.093	<0.210	<4.7	200	160	360
S-11135250-04-090617-MG-TP-6b-6	09/06/2017	6	<30	< 0.024	<0.048	<0.048	< 0.096	<0.216	<4.8	<9.2	<46	<60.0
S-11135250-04-090517-MG-TP-8-15	09/05/2017	15	<30	<0.025	< 0.049	<0.049	< 0.099	<0.222	<4.9	<10	<50	<64.9
S-11135250-04-090517-MG-TP-9c-6	09/05/2017	6	300	< 0.024	<0.048	<0.048	< 0.096	<0.216	<4.8	<9.7	<48	<62.5
S-11135250-04-090617-MG-TP-7a-15	09/06/2017	15	220	<0.025	<0.049	<0.049	<0.098	<0.221	<4.9	<10	<50	<64.9
S-11135250-04-090617-MG-TP-10-14	09/06/2017	14	120	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	<9.5	<47	<61.2

Note: Concentrations that are bold exceed the NMOCD Remediation Action Level

* Samples collected by ETC Field Services (BTEX analyzed by 8260 TCLP and reported in milligrams per liter)

NE = Not Established mg/Kg = milligrams per Kilogram -- = Not Applicable NA = Not Analyzed

Appendices

Appendix A Water Well Report

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer	(R=POE been rej O=orpha	blaced,						unch	a					
serves a water right file.)	C≃the fil closed)			(ers a		VW 2=N allest to		4=SE) IAD83 UTM in	meters)	(In	eet)	
POD Number CP 00727	Code	POD Sub- basin CP	County LE		Q C 16 4 3 2		Tws 22S	Rng 36E	X 661130	Y 3588673*	DistanceDe 1624	epthWellDep 267	100 C 100	Vater olumn 58
CP 00727 CLW475753	o	CP	LE	1	3 2	05	228	36E	661130	3588673*	1624	228		
										Ave	rage Depth to	Water:	212 fé	et
											Minimum D	epth:	212 fe	et
											Maximum D	epth:	212 fe	et
Record Count:2														
UTMNAD83 Radius	Search	(in mete	rs):											
Easting (X): 662	653.19		North	ing	(Y):	3589	236.7	'3		Radius: 2000	6			

8/28/17 12:13 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER



USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater

V

Geographic Area: United States V

GO

Click to hideNews Bulletins

Truck MC-16 0.65 mile E, SE

Please see news on new formats

Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

• 322531103153401

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 322531103153401 21S.36E.34.33341

Available data for this site Groundwater: Field measurements V GO

Lea County, New Mexico Hydrologic Unit Code 13070007 Latitude 32°25'31", Longitude 103°15'34" NAD27 Land-surface elevation 3,562 feet above NAVD88 This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period



- Period of approved data

Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

Questions about sites/data? Feedback on this web site Automated retrievals Help Data Tips Explanation of terms Subscribe for system changes News

Accessibility	Plug-Ins	FOIA	Privacy	Policies and Notices						
U.S. Departme	nt of the Interio	or U.S. Ge	ological Surve	Y						
Title: Groundwater for USA: Water Levels										
URL: https://	nwis.waterda	ta.usgs.go	v/nwis/gwl	evels?						
Page Contact Ir Page Last Modi				<u>eam</u>						

USA.gov

0.57 0.49 nadww01

Appendix B Laboratory Analytical Report



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

July 14, 2017

Bernie Bockish GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX

RE: MC 16

OrderNo.: 1707306

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/7/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

7/12/2017 2:30:22 PM

1

32708

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

MC 16

Surr: Toluene-d8

Project:

Client Sample ID: 11135250-04-070517MGTP2-4 Collection Date: 7/5/2017 10:30:00 AM

Lab ID: 1707306-001 Matrix: SOIL Received Date: 7/7/2017 10:25:00 AM Analyses Result **PQL** Qual Units **DF** Date Analyzed Batch **EPA METHOD 300.0: ANIONS** Analyst: MRA 20 7/12/2017 2:51:13 PM Chloride ND 30 mg/Kg 32761 EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: TOM **Diesel Range Organics (DRO)** ND mg/Kg 7/11/2017 5:07:51 PM 9.8 1 32705 mg/Kg Motor Oil Range Organics (MRO) ND 49 1 7/11/2017 5:07:51 PM 32705 Surr: DNOP 89.0 70-130 %Rec 1 7/11/2017 5:07:51 PM 32705 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 5.0 mg/Kg 1 7/11/2017 7:58:32 PM 32708 Surr: BFB 7/11/2017 7:58:32 PM 94.9 54-150 %Rec 1 32708 EPA METHOD 8260B: VOLATILES SHORT LIST Analyst: **DJF** Benzene ND 0.025 mg/Kg 1 7/12/2017 2:30:22 PM 32708 Toluene ND 0.050 7/12/2017 2:30:22 PM mg/Kg 1 32708 Ethylbenzene ND 0.050 mg/Kg 7/12/2017 2:30:22 PM 32708 1 Xylenes, Total ND 0.099 mg/Kg 1 7/12/2017 2:30:22 PM 32708 Surr: 1,2-Dichloroethane-d4 112 70-130 %Rec 7/12/2017 2:30:22 PM 1 32708 Surr: 4-Bromofluorobenzene 88.6 70-130 %Rec 1 7/12/2017 2:30:22 PM 32708 Surr: Dibromofluoromethane 108 70-130 %Rec 7/12/2017 2:30:22 PM 32708 1

70-130

%Rec

98.8

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

Qualifiers:

*

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

Value exceeds Maximum Contaminant Level.

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

MC 16

Project:

Client Sample ID: 11135250-04-070517MGTP1-10 Collection Date: 7/5/2017 11:00:00 AM Received Date: 7/7/2017 10:25:00 AM

Lab ID: 1707306-002	Matrix: S	SOIL		Received Date: 7/7/2017 10:25:00 AM				
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS						Analyst	MRA	
Chloride	320	30		mg/Kg	20	7/12/2017 3:03:37 PM	32761	
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS	;				Analyst	том	
Diesel Range Organics (DRO)	8900	980		mg/Kg	100	7/11/2017 6:35:07 PM	32705	
Motor Oil Range Organics (MRO)	6900	4900		mg/Kg	100	7/11/2017 6:35:07 PM	32705	
Surr: DNOP	0	70-130	S	%Rec	100	7/11/2017 6:35:07 PM	32705	
EPA METHOD 8015D: GASOLINE R	ANGE					Analyst	: NSB	
Gasoline Range Organics (GRO)	790	240		mg/Kg	50	7/11/2017 12:42:10 PN	32708	
Surr: BFB	165	54-150	S	%Rec	50	7/11/2017 12:42:10 PM	32708	
EPA METHOD 8260B: VOLATILES	SHORT LIST					Analyst	DJF	
Benzene	5.0	0.47		mg/Kg	20	7/12/2017 2:59:36 PM	32708	
Toluene	24	0.95		mg/Kg	20	7/12/2017 2:59:36 PM	32708	
Ethylbenzene	20	0.95		mg/Kg	20	7/12/2017 2:59:36 PM	32708	
Xylenes, Total	44	1.9		mg/Kg	20	7/12/2017 2:59:36 PM	32708	
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	20	7/12/2017 2:59:36 PM	32708	
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	20	7/12/2017 2:59:36 PM	32708	
Surr: Dibromofluoromethane	102	70-130		%Rec	20	7/12/2017 2:59:36 PM	32708	
Surr: Toluene-d8	100	70-130		%Rec	20	7/12/2017 2:59:36 PM	32708	

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

MC 16

Project:

Client Sample ID: 11135250-04-070517MGTP4-10 Collection Date: 7/5/2017 11:40:00 AM

Lab ID: 1707306-003 Matrix: SOIL Received Date: 7/7/2017 10:25:00 AM Analyses Result **PQL** Qual Units **DF** Date Analyzed Batch **EPA METHOD 300.0: ANIONS** Analyst: MRA Chloride 64 30 mg/Kg 20 7/12/2017 3:16:02 PM 32761 Analyst: TOM EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 7/11/2017 7:03:54 PM 1 32705 mg/Kg Motor Oil Range Organics (MRO) ND 48 1 7/11/2017 7:03:54 PM 32705 Surr: DNOP 77.0 70-130 %Rec 1 7/11/2017 7:03:54 PM 32705 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4.8 mg/Kg 1 7/11/2017 1:54:54 PM 32708 Surr: BFB 7/11/2017 1:54:54 PM 105 54-150 %Rec 1 32708 EPA METHOD 8260B: VOLATILES SHORT LIST Analyst: DJF Benzene ND 0.024 mg/Kg 1 7/12/2017 3:28:56 PM 32708 Toluene ND 0.048 7/12/2017 3:28:56 PM mg/Kg 1 32708 Ethylbenzene ND 0.048 mg/Kg 7/12/2017 3:28:56 PM 32708 1 Xylenes, Total ND 0.096 mg/Kg 1 7/12/2017 3:28:56 PM 32708 Surr: 1,2-Dichloroethane-d4 115 70-130 %Rec 1 7/12/2017 3:28:56 PM 32708 Surr: 4-Bromofluorobenzene 90.1 70-130 %Rec 1 7/12/2017 3:28:56 PM 32708 %Rec Surr: Dibromofluoromethane 112 70-130 7/12/2017 3:28:56 PM 32708 1 Surr: Toluene-d8 96.2 70-130 %Rec 7/12/2017 3:28:56 PM 32708 1

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

Qualifiers:

*

- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Value exceeds Maximum Contaminant Level.

- PQL Practical Quanitative Limit
- C 0/ Decovery outside of repas due to dilu
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

7/12/2017 3:58:17 PM 32708

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD			Client Sampl	e ID: 11	135250-04-070517MC	GTP5-16		
Project: MC 16			Collection I	Date: 7/5	/2017 12:20:00 PM			
Lab ID: 1707306-004	Matrix: S	SOIL	Received I	Received Date: 7/7/2017 10:25:00 AM				
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analysi	MRA		
Chloride	230	30	mg/Kg	20	7/12/2017 3:28:26 PM	32761		
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS	;			Analyst	: ТОМ		
Diesel Range Organics (DRO)	200	9.2	mg/Kg	1	7/12/2017 12:35:36 PN	32705		
Motor Oil Range Organics (MRO)	160	46	mg/Kg	1	7/12/2017 12:35:36 PN	32705		
Surr: DNOP	96.4	70-130	%Rec	1	7/12/2017 12:35:36 PM	32705		
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB		
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/11/2017 8:22:37 PM	32708		
Surr: BFB	119	54-150	%Rec	1	7/11/2017 8:22:37 PM	32708		
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst	DJF		
Benzene	ND	0.023	mg/Kg	1	7/12/2017 3:58:17 PM	32708		
Toluene	ND	0.047	mg/Kg	1	7/12/2017 3:58:17 PM	32708		
Ethylbenzene	ND	0.047	mg/Kg	1	7/12/2017 3:58:17 PM	32708		
Xylenes, Total	ND	0.093	mg/Kg	1	7/12/2017 3:58:17 PM	32708		
Surr: 1,2-Dichloroethane-d4	110	70-130	%Rec	1	7/12/2017 3:58:17 PM	32708		
Surr: 4-Bromofluorobenzene	87.1	70-130	%Rec	1	7/12/2017 3:58:17 PM	32708		
Surr: Dibromofluoromethane	109	70-130	%Rec	1	7/12/2017 3:58:17 PM	32708		

70-130

%Rec

1

97.1

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

Qualifiers:

Surr: Toluene-d8

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

7/12/2017 4:27:31 PM

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32708

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD			-		35250-04-070517MC	GTP3-10		
Project: MC 16					2017 12:40:00 PM			
Lab ID: 1707306-005	Matrix:	SOIL	Received Date: 7/7/2017 10:25:00 AM					
Analyses	Result	PQL Qua	l Units	DF	Date Analyzed	Batch		
EPA METHOD 300.0: ANIONS					Analyst	MRA		
Chloride	110	30	mg/Kg	20	7/12/2017 3:40:50 PM	32761		
EPA METHOD 8015M/D: DIESEL RANG		;			Analyst	том		
Diesel Range Organics (DRO)	35	9.8	mg/Kg	1	7/11/2017 8:01:08 PM	32705		
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	7/11/2017 8:01:08 PM	32705		
Surr: DNOP	84.3	70-130	%Rec	1	7/11/2017 8:01:08 PM	32705		
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst	NSB		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/11/2017 8:46:39 PM	32708		
Surr: BFB	102	54-150	%Rec	1	7/11/2017 8:46:39 PM	32708		
EPA METHOD 8260B: VOLATILES SHO	RT LIST				Analyst	DJF		
Benzene	ND	0.024	mg/Kg	1	7/12/2017 4:27:31 PM	32708		
Toluene	ND	0.048	mg/Kg	1	7/12/2017 4:27:31 PM	32708		
Ethylbenzene	ND	0.048	mg/Kg	1	7/12/2017 4:27:31 PM	32708		
Xylenes, Total	ND	0.096	mg/Kg	1	7/12/2017 4:27:31 PM	32708		
Surr: 1,2-Dichloroethane-d4	112	70-130	%Rec	1	7/12/2017 4:27:31 PM	32708		
Surr: 4-Bromofluorobenzene	92.6	70-130	%Rec	1	7/12/2017 4:27:31 PM	32708		
Surr: Dibromofluoromethane	109	70-130	%Rec	1	7/12/2017 4:27:31 PM	32708		

70-130

%Rec

96.9

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

Surr: Toluene-d8

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 5 of 8 J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client:	GHD											
Project:	MC 16											
Sample ID	1707306-001AMS	SampT	уре: М	6	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID:	11135250-04-0705	17 Batch	n ID: 32	705	F							
Prep Date:	7/10/2017	Analysis D	ate: 7/	11/2017	S	SeqNo: 1	393016	Units: mg/k	٢g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (Organics (DRO)	43	9.1	45.70	0	94.7	55.8	122				
Surr: DNOP		3.9		4.570		84.5	70	130				
Sample ID	1707306-001AMS	D SampT	ype: M \$	SD	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics		
Client ID:	11135250-04-0705	17 Batch	n ID: 32	705	F	RunNo: 4	4112					
Prep Date:	7/10/2017	Analysis D	ate: 7/	11/2017	5	SeqNo: 1	393017	Units: mg/k	٢g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (Organics (DRO)	55	9.7	48.50	0	113	55.8	122	23.5	20	R	
Surr: DNOP		4.7		4.850		97.4	70	130	0	0		
Sample ID	LCS-32705	SampT	ype: LC	S	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID:	LCSS	Batch	n ID: 32	705	RunNo: 44112							
Prep Date:	7/10/2017	Analysis D	ate: 7/	11/2017	5	SeqNo: 1	393023	Units: mg/k	٢g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (Organics (DRO)	51	10	50.00	0	102	73.2	114				
Surr: DNOP		4.5		5.000		89.6	70	130				
Sample ID	MB-32705	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics		
Client ID:	PBS	Batch	n ID: 32	705	F	RunNo: 4	4112					
Prep Date:	7/10/2017	Analysis D	ate: 7/	11/2017	S	SeqNo: 1	393024	Units: mg/k	٢g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range (Organics (DRO)	ND	10									
	e Organics (MRO)	ND	50									
Surr: DNOP		9.9		10.00		98.8	70	130				

Qualifiers:

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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 6 of 8

GHD

Project: MC 16 Sample ID MB-32708 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range Client ID: PBS Batch ID: 32708 RunNo: 44123 Prep Date: 7/10/2017 Analysis Date: 7/11/2017 SeqNo: 1392985 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) ND 5.0 Surr: BFB 1000 1000 104 54 150 TestCode: EPA Method 8015D: Gasoline Range Sample ID LCS-32708 SampType: LCS Client ID: LCSS Batch ID: 32708 RunNo: 44123 Prep Date: 7/10/2017 Analysis Date: 7/11/2017 SeqNo: 1392986 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Gasoline Range Organics (GRO) 24 5.0 25.00 0 97.0 76.4 125 1200 1000 54 Surr: BFB 116 150

Qualifiers:

Client:

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- POL Practical Quanitative Limit
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- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- - Page 7 of 8

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1707306** *14-Jul-17*

Client: GHD

Project: MC 16

Sample ID mb-32708	SampType: MBLK			Tes	tCode: El	List				
Client ID: PBS	Batch	h ID: 327	708	R	RunNo: 44140					
Prep Date: 7/10/2017	Analysis D	Date: 7/	11/2017	S	SeqNo: 1	393696	Units: mg/K	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.6	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.48		0 5000		96.9	70	130			
	0.48		0.5000		96.9	70	130			
Sample ID Ics-32708		ype: LC		Tes			8260B: Volat	tiles Short	List	
	SampT	ype: LC	s			PA Method		tiles Short	List	
Sample ID Ics-32708	SampT	h ID: 327	S 708	R	tCode: El	PA Method 4140			List	
Sample ID Ics-32708 Client ID: LCSS	SampT Batch	h ID: 327	S 708 11/2017	R	tCode: El RunNo: 4	PA Method 4140	8260B: Volat		RPDLimit	Qual
Sample ID Ics-32708 Client ID: LCSS Prep Date: 7/10/2017	SampT Batcl Analysis D	h ID: 327 Date: 7/	S 708 11/2017	R	tCode: El RunNo: 4 SeqNo: 1	PA Method 4140 393697	8260B: Volat Units: mg/K	٢g		Qual
Sample ID Ics-32708 Client ID: LCSS Prep Date: 7/10/2017 Analyte	SampT Batch Analysis D Result	h ID: 32 7 Date: 7/ PQL	S 708 11/2017 SPK value	R S SPK Ref Val	tCode: El RunNo: 4 SeqNo: 1: %REC	PA Method 4140 393697 LowLimit	8260B: Volat Units: mg/K HighLimit	٢g		Qual
Sample ID Ics-32708 Client ID: LCSS Prep Date: 7/10/2017 Analyte Benzene	SampT Batcl Analysis D Result 1.2	h ID: 32 7 Date: 7/ PQL 0.025	S 708 11/2017 SPK value 1.000	R SPK Ref Val 0	tCode: El RunNo: 4 BeqNo: 1: %REC 122	PA Method 4140 393697 LowLimit 70	8260B: Volat Units: mg/K HighLimit 130	٢g		Qual
Sample ID Ics-32708 Client ID: LCSS Prep Date: 7/10/2017 Analyte Benzene Toluene	SampT Batch Analysis D Result 1.2 1.0	h ID: 32 7 Date: 7/ PQL 0.025	S 708 11/2017 SPK value 1.000 1.000	R SPK Ref Val 0	tCode: El RunNo: 4 SeqNo: 1: %REC 122 99.7	PA Method 4140 393697 LowLimit 70 70	8260B: Volat Units: mg/k HighLimit 130 130	٢g		Qual
Sample ID Ics-32708 Client ID: LCSS Prep Date: 7/10/2017 Analyte Benzene Toluene Surr: 1,2-Dichloroethane-d4	SampT Batch Analysis D Result 1.2 1.0 0.56	h ID: 32 7 Date: 7/ PQL 0.025	S 708 11/2017 SPK value 1.000 1.000 0.5000	R SPK Ref Val 0	tCode: EI RunNo: 4 GeqNo: 1 %REC 122 99.7 111	PA Method 4140 393697 LowLimit 70 70 70 70	8260B: Volat Units: mg/k HighLimit 130 130 130	٢g		Qual

Qualifiers:

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- Page 8 of 8

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

Sample Log-In Check List

Client Name: GHD	Work Order Numbe	r: 1707306		RcptNo: 1	
Received By: Erin Melendrez	7/7/2017 10:25:00 AM	Л	UL MA		
Completed By: Ashley Gallegos	7/7/2017 3:45:41 PM		AJ		
Reviewed By:	7/10/17		Q		
Chain of Custody					
1. Custody seals intact on sample bottles?		Yes 🗌	No 🗆	Not Present 🗹	
2. Is Chain of Custody complete?		Yes 🔽	No 🗌	Not Present	
3. How was the sample delivered?		Courier			
<u>Log In</u>					
4. Was an attempt made to cool the sample	s?	Yes 🔽	No 🗌		
5. Were all samples received at a temperatu	re of >0° C to 6.0°C	Yes 🗹	No 🗌		
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗌		
7. Sufficient sample volume for indicated tes	t(s)?	Yes 🔽	No 🗍		
8. Are samples (except VOA and ONG) prop	erly preserved?	Yes 🗹	No 🗌		
9. Was preservative added to bottles?		Yes 🗌	No 🗹	NA 🗔	
10.VOA vials have zero headspace?		Yes 🗌	No 🗌	No VOA Vials 🗹	
11. Were any sample containers received bro	oken?	Yes 🗆	No 🗹	# of preserved	
12. Does paperwork match bottle labels?		Yes 🔽	No 🗌	bottles checked for pH:	
(Note discrepancies on chain of custody)				(<2 or >12 unless) Adjusted?	noted)
13. Are matrices correctly identified on Chain	of Custody?	Yes 🗹	No 🗌		
14. Is it clear what analyses were requested?15. Were all holding times able to be met?		Yes 🗹 Yes 🗹	No 🗔	Checked by:	
(If no, notify customer for authorization.)		res 💌			
Special Handling (if applicable)					
16. Was client notified of all discrepancies wit	h this order?	Yes 🗌	No 🗌		
Person Notified:	Date				
By Whom:	, Via:	🗌 eMail 🔲 F	Phone 🗌 Fax	In Person	
Regarding:					
Client Instructions:		nad dini katala kwaka kata na mana kwa n di		indinaintheannan a daona ao an an an	
17. Additional remarks:					

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good	Yes	·		

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D Scrivices Inc D Standard Rush Peoject Name: Project Name: Project Name: Part Lecrery C, MA 871110 Project Name: M.C. K. M.F. F. Project Ve. MA 871110 Project Name: M.C. K. M.F. Project Ve. MA 871110 Project Name: Project Name: Project Ve. MA 871110 Project Nameger: Project Nameger: Project Ve. MA 871110 Project Nameger: Project Nameger: Project Name Sampler And H Type Project Name Name Project Name Project Name Sampler And H Type Project Name Name Project Name Project Name Name Project Name Project Name Project Name Project Name Project Name Project Name Project Name Project Name Project Name Project Name <t< th=""><th>Chai</th><th>n-of-C</th><th>Chain-of-Custody Record</th><th>Turn-Around Time</th><th>ime:</th><th></th><th>1</th><th></th><th>1</th><th></th><th>i</th><th></th><th>1</th><th></th><th></th><th>-</th><th></th></t<>	Chai	n-of-C	Chain-of-Custody Record	Turn-Around Time	ime:		1		1		i		1			-	
Project Name: Project Name: MC-16_MT-6 MC-16_MT-6 MC-16_MT-6 Project Manager: MC-16_MT-7 Project MI-16 MC-17_MT-7 Project MI-16 MC-16_MT-7	Client: CH) Servin	ces. Inc	Standard			П	H		AL		T UI	2 4			A P	14
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Increase Bc-coord/Bocked-collarge Boot Teater Bc-coord/Bocked-collarge Boot Bc-collarge	Phone #: SC		0102								Analys	sis Re	quest				
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

September 20, 2017 Bernie Bockisch GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX

OrderNo.: 1709706

RE: Trunk MC 16

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/12/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to <u>www.hallenvironmental.com</u> or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

andis

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analy	rtical	Rei	nort	
Allaly	ucai	NC	μυιι	

Lab Order: 1709706

Date Reported: 9/20/2017

CLIENT: Project:	GHD Trunk MC 16				Lab O	rder:	1709706	
Lab ID:	1709706-001			Collection I	Date: 9/5	/2017 1:15:	00 PM	
Client Sample II	D: S-11135250-04-09	0517-MG-TP-8	8-15'	Ma	trix: SO	IL		
Analyses		Result	PQL	Qual Units	DF	Date Analy	yzed B	atch ID
EPA METHOD 3	00.0: ANIONS						Analys	: MRA
Chloride		ND	30	mg/Kg	20	9/15/2017 7	-	33876
EPA METHOD 8	015M/D: DIESEL RAN	GE ORGANICS	5	0.0			Analys	: TOM
Diesel Range Or		ND	10	mg/Kg	1	9/15/2017 5	-	33875
-	Organics (MRO)	ND	50	mg/Kg	1	9/15/2017 5		33875
Surr: DNOP	- g (80.0	70-130	%Rec	1	9/15/2017 5		33875
EPA METHOD 8	015D: GASOLINE RAI	NGE					Analys	: NSB
Gasoline Range	Organics (GRO)	ND	4.9	mg/Kg	1	9/15/2017 1	-	
Surr: BFB	9	95.2	54-150	%Rec	1	9/15/2017 1		
EPA METHOD 8	021B: VOLATILES						Analys	: NSB
Benzene		ND	0.025	mg/Kg	1	9/15/2017 1	-	
Toluene		ND	0.049	mg/Kg	1	9/15/2017 1		
Ethylbenzene		ND	0.049	mg/Kg	1	9/15/2017 1		
Xylenes, Total		ND	0.099	mg/Kg	1	9/15/2017 1		
-	fluorobenzene	105	66.6-132	%Rec	1	9/15/2017 1	0:59:48 PN	1 33871
Lab ID:	1709706-002			Collection I	Date: 9/5	/2017 2:15:	00 PM	
	1709706-002 D: S-11135250-04-09	0517-MG-TP-9)c-6'	Collection I Ma	Date: 9/5 atrix: SO		00 PM	
Client Sample II		0517-MG-TP-9 Result			trix: SO			atch ID
Client Sample II Analyses	D: S-11135250-04-09			Ma	trix: SO	IL	yzed B	
Client Sample II Analyses EPA METHOD 3	D: S-11135250-04-09	Result	PQL	Ma Qual Units	ntrix: SO DF	IL Date Analy	y zed B Analysi	: MRA
Client Sample II Analyses EPA METHOD 3 Chloride	D: S-11135250-04-09	Result 300	PQL 30	Ma	trix: SO	IL	Analysi Analysi	: MRA 33876
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN	Result 300 GE ORGANICS	PQL 30	Ma Qual Units mg/Kg	ntrix: SO DF 20	IL Date Analy 9/15/2017 7	yzed B Analysi :18:41 PM Analysi	:: MRA 33876 :: TOM
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN rganics (DRO)	Result 300 GE ORGANICS ND	PQL 30 3 0 9 .7	Ma Qual Units mg/Kg mg/Kg	ntrix: SO DF 20 1	IL Date Analy 9/15/2017 7 9/15/2017 6	Analysi Analysi :18:41 PM Analysi :19:23 PM	:: MRA 33876 :: TOM 33875
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN	Result 300 GE ORGANICS ND ND	PQL 30 5 9.7 48	Ma Qual Units mg/Kg mg/Kg	1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6	yzed B Analysi :18:41 PM Analysi :19:23 PM :19:23 PM	:: MRA 33876 :: TOM 33875 33875
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN rganics (DRO) Organics (MRO)	Result 300 GE ORGANICS ND ND 81.4	PQL 30 3 0 9 .7	Ma Qual Units mg/Kg mg/Kg	ntrix: SO DF 20 1	IL Date Analy 9/15/2017 7 9/15/2017 6	Analysi :18:41 PM Analysi :19:23 PM :19:23 PM :19:23 PM	 MRA 33876 TOM 33875 33875 33875
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8	D: S-11135250-04-09 300.0: ANIONS 3015M/D: DIESEL RAN Iganics (DRO) Organics (MRO) 3015D: GASOLINE RAI	Result 300 GE ORGANICS ND ND 81.4 NGE	PQL 30 9.7 48 70-130	Ma Qual Units mg/Kg mg/Kg %Rec	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 6	Analysi Analysi 18:41 PM Analysi 19:23 PM 19:23 PM 19:23 PM Analysi	 MRA 33876 TOM 33875 33875 33875 33875 33875 33875
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8 Gasoline Range	D: S-11135250-04-09 300.0: ANIONS 3015M/D: DIESEL RAN Iganics (DRO) Organics (MRO) 3015D: GASOLINE RAI	Result 300 GE ORGANICS ND 81.4 NGE ND	PQL 30 30 9.7 48 70-130 4.8	Ma Qual Units mg/Kg mg/Kg %Rec mg/Kg	ntrix: SO DF 20 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 1	yzed B Analysi :18:41 PM Analysi :19:23 PM :19:23 PM Analysi 1:23:08 PM	:: MRA 33876 33875 33875 33875 33875 :: NSB 1 33871
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8 Gasoline Range Surr: BFB	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN rganics (DRO) Organics (MRO) 2015D: GASOLINE RAN Organics (GRO)	Result 300 GE ORGANICS ND ND 81.4 NGE	PQL 30 9.7 48 70-130	Ma Qual Units mg/Kg mg/Kg %Rec	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 6	Analysi :18:41 PM Analysi :19:23 PM :19:23 PM :19:23 PM Analysi 1:23:08 PM 1:23:08 PM	 MRA 33876 33875 33875 33875 33875 x NSB 33871 33871
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8 Gasoline Range Surr: BFB EPA METHOD 8	D: S-11135250-04-09 300.0: ANIONS 3015M/D: DIESEL RAN Iganics (DRO) Organics (MRO) 3015D: GASOLINE RAI	300 GE ORGANICS ND 81.4 NGE ND 103	PQL 30 9.7 48 70-130 4.8 54-150	Ma Qual Units mg/Kg mg/Kg %Rec mg/Kg %Rec	ttrix: SO DF 20 1 1 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 1 9/15/2017 1	Analysi (18:41 PM Analysi (19:23 PM (19:23 PM (19:23 PM Analysi (1:23:08 PM (1:23:08 PM (1:23:08 PM (1:23:08 PM) (1:23:08 PM)	 MRA 33876 TOM 33875 33875 33875 33875 33875 NSB 33871 33871 33871 SSB
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8 Gasoline Range Surr: BFB EPA METHOD 8 Benzene	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN rganics (DRO) Organics (MRO) 2015D: GASOLINE RAN Organics (GRO)	300 GE ORGANICS ND 81.4 NGE ND 103 ND	PQL 30 9.7 48 70-130 4.8 54-150 0.024	Ma Qual Units mg/Kg mg/Kg %Rec mg/Kg %Rec	ntrix: SO DF 20 1 1 1 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 1 9/15/2017 1 9/15/2017 1	yzed B Analysi :18:41 PM Analysi :19:23 PM :19:23 PM Analysi 1:23:08 PM Analysi 1:23:08 PM	 MRA 33876 33875 33875 33875 33875 33871 33871 33871 33871 33871 33871 33871
Client Sample II Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8 Gasoline Range Surr: BFB EPA METHOD 8 Benzene Toluene	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN rganics (DRO) Organics (MRO) 2015D: GASOLINE RAN Organics (GRO)	Result 300 GE ORGANICS ND 81.4 NGE ND 103 ND ND ND ND	PQL 30 9.7 48 70-130 4.8 54-150 0.024 0.024	Qual Units mg/Kg mg/Kg %Rec mg/Kg %Rec mg/Kg %Rec	ttrix: SO DF 20 1 1 1 1 1 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 1 9/15/2017 1 9/15/2017 1 9/15/2017 1	yzed B Analysi :18:41 PM Analysi :19:23 PM :19:23 PM Analysi 1:23:08 PM Analysi 1:23:08 PM 1:23:08 PM	 MRA 33876 33875 33875 33875 33875 33875 33871 33871 33871 33871 33871 33871 33871
Analyses EPA METHOD 3 Chloride EPA METHOD 8 Diesel Range Or Motor Oil Range Surr: DNOP EPA METHOD 8 Gasoline Range Surr: BFB EPA METHOD 8 Benzene	D: S-11135250-04-09 200.0: ANIONS 2015M/D: DIESEL RAN rganics (DRO) Organics (MRO) 2015D: GASOLINE RAN Organics (GRO)	300 GE ORGANICS ND 81.4 NGE ND 103 ND	PQL 30 9.7 48 70-130 4.8 54-150 0.024	Ma Qual Units mg/Kg mg/Kg %Rec mg/Kg %Rec	ntrix: SO DF 20 1 1 1 1 1 1 1	IL Date Analy 9/15/2017 7 9/15/2017 6 9/15/2017 6 9/15/2017 1 9/15/2017 1 9/15/2017 1	yzed B Analysi :18:41 PM Analysi :19:23 PM :19:23 PM Analysi 1:23:08 PM Analysi 1:23:08 PM 1:23:08 PM 1:23:08 PM	 MRA 33876 33875 33875 33875 33875 33871

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

- Qualifiers: * Value exceeds Maximum Contaminant Level.
 - D Sample Diluted Due to Matrix
 - H Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analy	rtical	Rei	nort	
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Lab Order: 1709706

Date Reported: 9/20/2017

CLIENT:GHDProject:Trunk MC 16				Lab O	rder: 1709	9706	
Lab ID: 1709706-003			Collection	Date: 9/6	/2017 2:30:00 PI	М	
Client Sample ID: S-11135250-04-0906	517-MG-TP-7	7a-15'	Μ	atrix: SO	IL		
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Ba	tch ID
EPA METHOD 300.0: ANIONS					Ar	nalyst:	MRA
Chloride	220	30	mg/Kg	20	9/15/2017 7:31:0	5 PM	33876
EPA METHOD 8015M/D: DIESEL RANGI		5			Ar	nalyst:	том
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/18/2017 3:31:1:	-	33875
Motor Oil Range Organics (MRO)	ND	50	0 0	1	9/18/2017 3:31:1:		33875
Surr: DNOP	76.4	70-130	%Rec	1	9/18/2017 3:31:1:		33875
EPA METHOD 8015D: GASOLINE RANG	ε				Ar	nalyst:	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	9/18/2017 9:31:10	-	33871
Surr: BFB	97.6	54-150	%Rec	1	9/18/2017 9:31:10		33871
EPA METHOD 8021B: VOLATILES					Ar	nalyst:	NSB
Benzene	ND	0.025	mg/Kg	1	9/18/2017 9:31:10	-	33871
Toluene	ND	0.049	mg/Kg	1	9/18/2017 9:31:10		33871
Ethylbenzene	ND	0.049	mg/Kg	1	9/18/2017 9:31:10		33871
Xylenes, Total	ND	0.098	mg/Kg	1	9/18/2017 9:31:10		33871
Surr: 4-Bromofluorobenzene	112	66.6-132	%Rec	1	9/18/2017 9:31:10	5 AM	33871
Lab ID: 1709706-004			Collection	Date: 9/6	/2017 4:00:00 PI	М	
Client Sample ID: S-11135250-04-0906	517-MG-TP-6	6b-6'		atrix: SO			
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Ba	tch ID
EPA METHOD 300.0: ANIONS					Ar	nalvst:	MRA
Chloride	ND	30	mg/Kg	20	9/15/2017 7:43:3	-	33876
EPA METHOD 8015M/D: DIESEL RANGI			5 5			nalyst:	
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	9/15/2017 7:16:4	-	33875
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	9/15/2017 7:16:4		33875
	80.4	70-130	%Rec	1	9/15/2017 7:16:4		33875
Surr: DNOP	00.4				۸.		NSB
					Ar	nalvst:	
EPA METHOD 8015D: GASOLINE RANG	θE	4 8	ma/Ka	1			33871
EPA METHOD 8015D: GASOLINE RANG Gasoline Range Organics (GRO)	SE ND	4.8 54-150	00	1	9/16/2017 1:44:3	3 AM	33871 33871
EPA METHOD 8015D: GASOLINE RANG Gasoline Range Organics (GRO) Surr: BFB	θE	4.8 54-150			9/16/2017 1:44:3 9/16/2017 1:44:3	3 AM 3 AM	33871
EPA METHOD 8015D: GASOLINE RANG Gasoline Range Organics (GRO) Surr: BFB EPA METHOD 8021B: VOLATILES	SE ND 94.6	54-150	%Rec	1	9/16/2017 1:44:33 9/16/2017 1:44:33 Ar	3 AM 3 AM nalyst:	33871 NSB
EPA METHOD 8015D: GASOLINE RANG Gasoline Range Organics (GRO) Surr: BFB EPA METHOD 8021B: VOLATILES Benzene	SE ND 94.6 ND	54-150 0.024	%Rec mg/Kg	1	9/16/2017 1:44:33 9/16/2017 1:44:33 Ar 9/16/2017 1:44:33	3 AM 3 AM nalyst: 3 AM	33871 NSB 33871
EPA METHOD 8015D: GASOLINE RANG Gasoline Range Organics (GRO) Surr: BFB EPA METHOD 8021B: VOLATILES Benzene Toluene	SE ND 94.6 ND ND	54-150 0.024 0.048	%Rec mg/Kg mg/Kg	1 1 1	9/16/2017 1:44:33 9/16/2017 1:44:33 Ar 9/16/2017 1:44:33 9/16/2017 1:44:33	3 AM 3 AM nalyst: 3 AM 3 AM	33871 NSB 33871 33871
EPA METHOD 8015D: GASOLINE RANG Gasoline Range Organics (GRO) Surr: BFB EPA METHOD 8021B: VOLATILES Benzene	SE ND 94.6 ND	54-150 0.024	%Rec mg/Kg	1	9/16/2017 1:44:33 9/16/2017 1:44:33 Ar 9/16/2017 1:44:33	3 AM 3 AM nalyst: 3 AM 3 AM 3 AM	33871 NSB 33871

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

- Qualifiers: * Value exceeds Maximum Contaminant Level.
 - D Sample Diluted Due to Matrix
 - H Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 7
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report	alytical Report
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Lab Order: 1709706

Date Reported: 9/20/2017

	GHD Trunk MC 16				Lab O	rder: 1709	706	
Lab ID:	1709706-005			Collection D	ate: 9/6	/2017 4:30:00 PN	Л	
Client Sample ID:	S-11135250-04-090)617-MG-TP-1	10-14'	Ma	t rix: SO	IL		
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed	Batch	ID
EPA METHOD 30	0.0: ANIONS					An	alyst: MR	۲A
Chloride		120	30	mg/Kg	20	9/15/2017 7:55:55	5 PM 338	376
EPA METHOD 80	15M/D: DIESEL RAN	GE ORGANICS	S			An	alyst: TO	M
Diesel Range Orga	anics (DRO)	ND	9.5	mg/Kg	1	9/15/2017 7:45:29	PM 338	875
Motor Oil Range C	organics (MRO)	ND	47	mg/Kg	1	9/15/2017 7:45:29	PM 338	875
Surr: DNOP		85.6	70-130	%Rec	1	9/15/2017 7:45:29	PM 338	875
EPA METHOD 80	15D: GASOLINE RAN	IGE				An	alyst: NS	в
Gasoline Range O	rganics (GRO)	ND	4.7	mg/Kg	1	9/16/2017 2:08:07	AM 338	371
Surr: BFB		99.1	54-150	%Rec	1	9/16/2017 2:08:07	AM 338	371
EPA METHOD 80	21B: VOLATILES					An	alyst: NS	в
Benzene		ND	0.024	mg/Kg	1	9/16/2017 2:08:07	AM 338	371
Toluene		ND	0.047	mg/Kg	1	9/16/2017 2:08:07	AM 338	371
Ethylbenzene		ND	0.047	mg/Kg	1	9/16/2017 2:08:07	AM 338	371
Xylenes, Total		ND	0.095	mg/Kg	1	9/16/2017 2:08:07	AM 338	371
Surr: 4-Bromoflu	uorobenzene	110	66.6-132	%Rec	1	9/16/2017 2:08:07	'AM 338	371

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

Qualifiers:

*

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded

Hall Environmental Analysis Laboratory, Inc.

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 7
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified W

GHD

Client:

Project: Trunk	MC 16			
Sample ID MB-33876	SampType: mblk	TestCode: EPA Method	300.0: Anions	
Client ID: PBS	Batch ID: 33876	RunNo: 45653		
Prep Date: 9/14/2017	Analysis Date: 9/15/2017	SeqNo: 1450182	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
Sample ID LCS-33876	SampType: Ics	TestCode: EPA Method	300.0: Anions	
Client ID: LCSS	Batch ID: 33876	RunNo: 45653		
Prep Date: 9/14/2017	Analysis Date: 9/15/2017	SeqNo: 1450183	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	14 1.5 15.00	0 91.6 90	110	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 4 of 7

ND

ND

9.0

10

50

10.00

GHD

Qual

Qual

Project: Trunk MC 16 Sample ID LCS-33875 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 33875 RunNo: 45643 SeqNo: 1448863 Prep Date: 9/14/2017 Analysis Date: 9/15/2017 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Diesel Range Organics (DRO) 10 51 50.00 0 73.2 101 114 Surr: DNOP 5.000 94.6 4.7 70 130 Sample ID MB-33875 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 33875 RunNo: 45643 Prep Date: 9/14/2017 Analysis Date: 9/15/2017 SeqNo: 1448864 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit

Qualifiers:

Client:

Diesel Range Organics (DRO)

Surr: DNOP

Motor Oil Range Organics (MRO)

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range

90.1

70

130

- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 5 of 7

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1709706 20-Sep-17

Client: Project:	GHD Trunk M	MC 16									
Sample ID	MB-33871	SampT	ype: MI	BLK	Tes	tCode: E	PA Method	8015D: Gaso	ine Rang	е	
Client ID:	PBS	Batch	n ID: 33	871	F	aunNo: 4	5651				
Prep Date:	9/14/2017	Analysis D	ate: 9/	15/2017	S	SeqNo: 1	449668	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	ND 1100	5.0	1000		105	54	150			
Sample ID	LCS-33871	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	ine Rang	е	
Client ID:	LCSS	Batch	n ID: 33	871	F	RunNo: 4	5651				
Prep Date:	9/14/2017	Analysis D	ate: 9/	15/2017	S	SeqNo: 1	449669	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	e Organics (GRO)	28	5.0	25.00	0	114	76.4	125			
Surr: BFB		1100		1000		114	54	150			
Sample ID	MB-33888	SampT	уре: МІ	BLK	Tes	tCode: E	PA Method	8015D: Gaso	ine Rang	е	
Client ID:	PBS	Batch	n ID: 33	888	F	RunNo: 4	5702				
Prep Date:	9/15/2017	Analysis D	ate: 9/	18/2017	S	SeqNo: 1	450912	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1100		1000		105	54	150			
Sample ID	LCS-33888	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	ine Rang	е	
Client ID:	LCSS	Batch	n ID: 33	888	F	RunNo: 4	5702				
Prep Date:	9/15/2017	Analysis D	ate: 9/	18/2017	S	SeqNo: 1	450913	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1200		1000		115	54	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 6 of 7

Hall En	vironmenta	al Anal	ysis L	Laborat	ory, Inc.					WO#:	1709706 20-Sep-17
Client: Project:	GHD Trunk M	C 16									
Sample ID	MB-33871	Samp	Гуре: МЕ	BLK	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID:	PBS	Batc	h ID: 33	871	F	RunNo: 4	5651				
Prep Date:	9/14/2017	Analysis E	Date: 9/	15/2017	S	SeqNo: 1	449704	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	0.025								
Toluene		ND	0.050								
Ethylbenzene		ND	0.050								
Xylenes, Total		ND	0.10								
Surr: 4-Brom	ofluorobenzene	1.2		1.000		117	66.6	132			
Sample ID	LCS-33871	Samp	Гуре: LC	S	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID:	LCSS	Batc	h ID: 33	871	F	RunNo: 4	5651				
Prep Date:	9/14/2017	Analysis E	Date: 9/	15/2017	S	SeqNo: 1	449705	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		1.1	0.025	1.000	0	114	80	120			
Toluene		1.1	0.050	1.000	0	111	80	120			
Ethylbenzene		1.1	0.050	1.000	0	114	80	120			
Xylenes, Total		3.5	0.10	3.000	0	116	80	120			
Surr: 4-Brom	ofluorobenzene	1.2		1.000		118	66.6	132			
Sample ID	MB-33888	Samp	Гуре: МЕ	BLK	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID:	PBS	Batc	h ID: 33	888	F	RunNo: 4	5702				
Prep Date:	9/15/2017	Analysis E	Date: 9/	18/2017	S	SeqNo: 1	450947	Units: %Red	•		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Brom	ofluorobenzene	1.2		1.000		120	66.6	132			
Sample ID	LCS-33888	Samp	Гуре: LC	S	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID:	LCSS	Batc	h ID: 33	888	F	RunNo: 4	5702				
Prep Date:	9/15/2017	Analysis E	Date: 9/	18/2017	5	SeqNo: 1	450948	Units: %Red	:		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Brom	ofluorobenzene	1.2		1.000		122	66.6	132			

* Value exceeds Maximum Contaminant Level.

QC SUMMARY REPORT

D Sample Diluted Due to Matrix

- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 7 of 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY	TEL: 505-345-3975 I	4901 Hawkins NE querque, NM 87109	samı	Sample Log-In Check List			
Client Name: GHD	Work Order Number:	1709706		RcptNo: 1			
Received By: Erin Melendrez	9/12/2017 10:15:00 AM	l	LIL A	-			
Completed By: Ashley Gallegos Reviewed By: STRC 09(14)	9/13/2017 3:16:13 PM (17	S	AJ				
Chain of Custody							
1. Custody seals intact on sample bottles	?	Yes 🗌	No 🗀	Not Present 🗹			
2. Is Chain of Custody complete?		Yes 🔽	No 🗌	Not Present			
3. How was the sample delivered?		Courier					
<u>Log In</u>							
4. Was an attempt made to cool the sam	ples?	Yes 🗹	No 🗌				
5. Were all samples received at a temper	ature of >0° C to 6.0°C	Yes 🔽	No 🗌	NA 🗌			
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗆				
7. Sufficient sample volume for indicated	test(s)?	Yes 🗹	No 🗌				
8. Are samples (except VOA and ONG) p	roperly preserved?	Yes 🗹	No 🗆				
9. Was preservative added to bottles?		Yes 🗌	No 🗹				
10.VOA vials have zero headspace?		Yes	No 🗆	No VOA Vials 🗹			
11. Were any sample containers received	broken?	Yes	No 🗹	# of preserved bottles checked			
12. Does paperwork match bottle labels? (Note discrepancies on chain of custod	ly)	Yes 🗹	No 🗆	for pH: (<2 or >12 unless noted)			
13. Are matrices correctly identified on Cha		Yes 🗹	No 🗆	Adjusted?			
14. Is it clear what analyses were requested		Yes 🗹	No 🗌				
15. Were all holding times able to be met? (If no, notify customer for authorization		Yes 🗹	No 🗌	Checked by:			
Special Handling (if applicable)							
40 Mins allows we tilled of all discovery analog	with this and a 2	Vac [1]	No 🗔				

16. Was client notified of all d	iscrepancies with this order?	Yes	No 🗌	NA 🗹
Person Notified:	Date	ſ		<i>.</i>
By Whom:	Via:	eMail	Phone 🗌 Fax	
Regarding:				
Client Instructions:	un en en el la la fina de la cala de la cipación de la calación de sector de sector de la calación de la calaci	an da an		

_

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes			l

A lie		 Fax 505-345-4107 Analysis Request 	1	202. (1) 78087	sebi	5.7) ardina (F.C. 808 Резті 82609 (VO) 82609 (VO) 82609 (VO) 82609 (VO) 71 вирова		X	X	X	X			And out the time the	
		Tel. 505-345-3975 Analy	(SMI	(1.403 t 01 8270 S		4 borlieM) H9T 5 borlieM) 8D3 10 015(8) 2'HA9 10 015(8) 2'HA9 10 013(8) 2'HA9									
		Tel. 506		яа / о	49)	TPH 80158	X	X	X	X	λ			į	
1						BTEX + MT		X	X	X	X				
	FIO	or Trunk	ockisch	Sant -		HEAL No.	-001	-003	-003	-004	-005		time Time	94217 105	
ame.			C	ichael Co	emperature: 5.	Preservative Type	TCF					_		NL	
K Standard	Project Name:	Project #:	Project Manager	Sampler: M	-	Container Type and #	Yezzai Jac	-				-	Recorded		
CHD Services Inc	ALS LZC	87110 22	Kische Shid e an el 4 (Full Validation)			Sample Request ID	S STATE - CH-rEGESTANE TANK (S So) Jun	S-INSSACC CH.OYOSIA.MGTP. Sce	Sunssee of cases we france for Taris	Sinassesserverence miller Chold	"HI-01-11-11-11-11-0-11-0-11-			1	
Servi	TIM		HSS SOS	Mailing Address: D.I. Trakion U.E. All Decorrections, N.M. Phone #: 505 884 06 email or Fax# Bernon A.B.ec		1 Other		Matrix	0	5	S.	S	5		Relinquishe
HO S	Mailing Address:	Econ	email or Fax# D QA/OC Package: Standard	AP	(Type)	Time	1315	1415	1430	1600	1630		1 Time:	2 8	
Client:	Mailing	NE All berg Phone # 50	email or Fax QA/QC Packs	Accreditation	DD (Type)	Date	9/5	STB	9/6	10	9/6		Date:	117	
Analytical Report 539986

for

Energy Transfer- Midland

Project Manager: Johnnie Bradford

Trunk MC-16

15-NOV-16

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400) Xenco-San Antonio: Texas (T104704534) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



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15-NOV-16



Project Manager: Johnnie Bradford Energy Transfer- Midland 600 N Marienfield Ste 700 Midland, TX 79701

Reference: XENCO Report No(s): 539986 Trunk MC-16 Project Address: Eunice NM

Johnnie Bradford:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 539986. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 539986 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks Project Manager

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Sample Id WstPile BtmHole S-Wal

Sample Cross Reference 539986



Energy Transfer- Midland, Midland, TX

Trunk MC-16

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	11-07-16 08:57		539986-001
S	11-07-16 09:00	- 10 ft	539986-002
S	11-07-16 09:03	- 10 ft	539986-003



CASE NARRATIVE



Client Name: Energy Transfer- Midland Project Name: Trunk MC-16

Project ID: Work Order Number(s): 539986 Report Date: 15-NOV-16 Date Received: 11/08/2016

Sample receipt non conformances and comments:

Level III Std QC+Forms

Sample receipt non conformances and comments per sample:

None



Certificate of Analysis Summary 539986 Energy Transfer-Midland, Midland, TX Project Name: Trunk MC-16



Project 10: Contact: Johnnie Bradford Project Location: Eunice NM

Date Received in Lab: Tue Nov-08-16 02:55 pm Report Date: 15-NOV-16 Project Manager: Kelsey Brooks

	Lab Id:	539986-001 WeiBile	539986-002 Biredialo	539986-003 c 11/c
Analysis Requested	Field Id:	WstPile	BtmHole	S-Wal
	Depth:		-10 ft	-10 ft
	Matrix:	TIOS	SOIL	SOIL
	Sampled:	Nov-07-16 08:57	Nov-07-16 09:00	Nov-07-16 09:03
TCLP BTEX by SW 8260B	Extracted:	Nov-14-16 15:44	Nov-14-16 15:42	Nov-14-16 15:43
SUB: TX104704215	Analyzed:	Nov-14-16 18:06	Nov-14-16 17:28	Nov-14-16 17:47
	Units/RL:	mg/L RL	mg/L RL	mg/L RL
Benzene		0.00535 0.00500	ND 0.00500	ND 0.00500
Toluene		0.0539 0.00500	ND 0.00500	0.0362 0.00500
Ethylbenzene		0.101 0.00500	ND 0.00500	0.0239 0.00500
m,p-Xylenes		0.587 0.0100	ND 0.0100	0.183 0.0100
o-Xylene		0.256 0.00500	0.118 0.00500	0.158 0.00500
TCLP Mercury by SW 7470A	Extracted:	Nov-14-16 09:30	Nov-14-16 09:30	Nov-14-16 09:30
SUB: TX104704215	Analyzed:	Nov-14-16 15:55	Nov-14-16 15:59	Nov-14-16 16:01
	Units/RL:	mg/L RL	mg/L RL	mg/L RL
Mercury		ND 0.000200	ND 0.000200	ND 0.000200
TCLP Metals by SW846 6010B	Extracted:	Nov-14-16 09:30	Nov-14-16 09:30	Nov-14-16 09:30
SUB: 1X104704215	Analyzed:	Nov-14-16 21:13	Nov-14-16 21:22	Nov-14-16 21:25
	Units/RL:	mg/L RL	mg/L RL	mg/L RL
Arsenic		ND 0.0500	0.0695 0.0500	ND 0.0500
Barium		0.490 0.0500	0.527 0.0500	1.72 0.0500
Cadmium	F. 40	ND 0.0250	ND 0.0250	ND 0.0250
Chromium		ND 0.0500	ND 0.0500	ND 0.0500
Lead		ND 0.0500	ND 0.0500	ND 0.0500
Selenium		ND 0.100	001.0 ON	ND 0.100
Silver		ND 0.100	ND 0.100	ND 0.100

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratorics. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invorced for this work order unless otherwise agreed to in writing.

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Version: 1.%

Kelsey Brooks Project Manager

wall hurs Mon



Eunice NM

Project Location:

Certificate of Analysis Summary 539986 Energy Transfer-Midland, Midland, TX Project Name: Trunk MC-16



Date Received in Lab: Tue Nov-08-16 02:55 pm Report Date: 15-NOV-16 Project Manager: Kelsey Brooks

	Lab Id:	539986-001	539986-002	539986-003	
Andries Ronnestod	Field Id:	WstPile	BtmHole	S-Wal	
noiconhour ciclimurs	Depth:		10 ft	10 ft.	
	Matrix:	SOIL	SOIL	SOIL	
	Sampled:	Nov-07-16 08:57	Nov-07-16 09:00	Nov-07-16 09:03	
Inorganic Anions by EPA 300/300.1	Extracted:	Nov-09-16 11:00	Nov-09-16 11:00	Nov-09-16 11:00	
	Analyzed:	Nov-09-16 14:17	Nov-09-16 14:38	Nov-09-16 14:45	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		308 5.00	416 5.00	324 5.00	
TPH by SW 8015B	Extracted:	Nov-08-16 17:00	Nov-08-16 17:00	Nov-08-16 17:00	
	Analyzed:	Nov-09-16 00:06	Nov-09-16 00:31	Nov-09-16 00:55	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C10 Gasoline Range Hydrocarbons		2230 74.9	4160 74.9	3710 74.7	
C10-C28 Diesel Range Hydrocarbons		7630 74.9	11800 74.9	12700 74.7	
Total TPH		9970 74.9	16100 74.9	16500 74.7	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Murs Woah Kelsey Brooks



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- ** Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit
- MDL Method Detection Limit SDL Sample Detection Limit
- LOD Limit of Detection

LOO Limit of Quantitation

- PQL Practical Quantitation Limit MQL Method Quantitation Limit
- **DL** Method Detection Limit
- NC Non-Calculable
- + NELAC certification not offered for this compound.
- * (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	



Project Name: Trunk MC-16

Work Ord Lab Batch #	lers: 53998	6, Sample: 539986-001 / SMP	Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 11/09/16 00:06	SU	RROGATE R	ECOVERY S	STUDY	1
	TPH	l by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chloroocta	ne		129	99.8	129	70-135	
o-Terphenyl			64.3	49.9	129	70-135	
ab Batch #	: 3003551	Sample: 539986-002 / SMP	Bate	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 11/09/16 00:31	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	l by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		112	99.8	112	70-135	
o-Terphenyl			59.2	49.9	119	70-135	
Lab Batch #	: 3003551	Sample: 539986-003 / SMP	Bate	h: 1 Matrix	; Soil		
Units:	mg/kg	Date Analyzed: 11/09/16 00:55	SU	RROGATE R	ECOVERY	STUDY	
	ТРН	l by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta	ne		114	99.6	114	70-135	
o-Terphenyl		the second second	60.7	49.8	122	70-135	
.ab Batch #	: 3003850	Sample: 539986-002 / SMP	Bate	h: 1 Matrix	: Soil		
Units:	mg/L	Date Analyzed: 11/14/16 17:28	su	RROGATE R	ECOVERY	STUDY	
	TCLP B	TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluor	omethane		0.0604	0.0500	121	75-131	
1,2-Dichlorod	thane-D4		0.0452	0.0500	90	63-144	
Toluene-D8			0.0461	0.0500	92	80-117	

* Surrogate outside of Laboratory QC limits

- ** Surrogates outside limits; data and surrogates confirmed by reanalysis
- *** Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Project Name: Trunk MC-16

	rders : 53998 #: 3003850	6, Sample: 539986-003 / SMP	Bate	Project ID h: Matrix			
Units:	mg/L	Date Analyzed: 11/14/16 17:47	SU	RROGATE R	ECOVERY	STUDY	
	TCLP B	TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromoflu	oromethane		0.0592	0.0500	118	75-131	
1,2-Dichlor	oethane-D4		0.0441	0.0500	88	63-144	
Toluene-D8	3		0.0465	0.0500	93	80-117	
ab Batch	#: 3003850	Sample: 539986-001 / SMP	Bate	h: 1 Matrix	: Soil		ļc
Onits:	mg/L	Date Analyzed: 11/14/16 18:06	su	RROGATE R	ECOVERY	STUDY	-
1	TCLP B	TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromoflu	oromethane		0.0490	0,0500	98	75-131	
1,2-Dichlor	oethane-D4		0.0457	0.0500	91	63-144	1
Toluene-D8	1		0.0486	0.0500	97	80-117	
Lab Batch	#: 3003551	Sample: 715881-1-BLK / BLI	C Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 11/08/16 20:52	SU	RROGATE R	ECOVERY S	STUDY	-
		l by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooct	ane		128	100	128	70-135	
o-Terpheny			64.4	50.0	129	70-135	
ab Batch	#: 3003850	Sample: 716102-1-BLK / BLF	Batel	h: l Matrix	: Water		
Units:	mg/L	Date Analyzed: 11/14/16 13:36	SU	RROGATE R	ECOVERY S	STUDY	
		TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromoflu	oromethane		0.0528	0.0500	106	75-131	
1,2-Dichlor	bethane-D4		0.0455	0.0500	91	63-144	-
Toluene-D8			0.0455	0.0500	91	80-117	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / BAll results are based on MDL and validated for QC purposes.



Project Name: Trunk MC-16

Work Orde Lab Batch #:		6, Sample: 715881-1-BKS/B	KS Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 11/08/16 21:16	7.4.5	RROGATE R		STUDY	
	ТРН	l by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	2		129	100	129	70-135	-
o-Terphenyl			64.0	50.0	128	70-135	
ab Batch #:	3003850	Sample: 716102-1-BKS / BI	KS Batel	h: 1 Matrix	: Water		
Jnits:	mg/L	Date Analyzed: 11/14/16 11:01	SU	RROGATE R	ECOVERY S	STUDY	
		TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoro	methane		0.0499	0.0500	100	75-131	
1,2-Dichloroeth	hane-D4		0.0512	0.0500	102	63-144	
Toluene-D8			0.0491	0.0500	98	80-117	
ab Batch #:	3003551	Sample: 715881-1-BSD / BS	SD Batel	n: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 11/08/16 21:40	su	RROGATE R	ECOVERY S	STUDY	
	ТРН	by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane			124	100	124	70-135	
o-Terphenyl			64.8	50.0	130	70-135	
ab Batch #:	3003850	Sample: 716102-1-BSD / BS	SD Batel	n: l Matrix	: Water		
Jnits:	mg/L	Date Analyzed: 11/14/16 11:20	SU	RROGATE R	ECOVERY S	STUDY	
		TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoro	methane		0.0489	0.0500	98	75-131	
1,2-Dichloroeth	nane-D4		0.0506	0.0500	101	63-144	
Toluene-D8			0.0498	0.0500	100	80-117	

Surrogate outside of Laboratory QC limits

- ** Surrogates outside limits; data and surrogates confirmed by reanalysis
- *** Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.



Project Name: Trunk MC-16

Work Ord Lab Batch #:	ers: 53998	6, Sample: 539784-001 S / MS	Bate	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 11/08/16 22:53		RROGATE R		STUDY	
	ТРН	l by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctan	ie		128	99.9	128	70-135	
o-Terphenyl			60.8	50.0	122	70-135	
Lab Batch #:	: 3003850	Sample: 540067-001 S / MS	Bate	h: 1 Matrix	: Soil		
Units:	mg/L	Date Analyzed: 11/14/16 15:32	SU	RROGATE R	ECOVERY S	STUDY	
	TCLP B	TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluor	omethane		0.0474	0.0500	95	75-131	
1.2-Dichloroe	thane-D4		0.0483	0.0500	97	63-144	
Toluene-D8			0.0498	0.0500	100	80-117	
Lab Batch #:	: 3003551	Sample: 539784-001 SD / M	ISD Bate	h: 1 Matrix	: Soil	1	
Units:	mg/kg	Date Analyzed: 11/08/16 23:17	su	RROGATE R	ECOVERY	STUDY	-
	TPH	I by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctan	ie		129	99.9	129	70-135	
o-Terphenyl		the second se	60.6	50.0	121	70-135	
Lab Batch #:	: 3003850	Sample: 540067-001 SD / N	ISD Bate	h: 1 Matrix	: Soil		
Jnits:	mg/L	Date Analyzed: 11/14/16 15:52	SU	RROGATE R	ECOVERY	STUDY	
	TCLP B	TEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluor	omethane		0.0470	0.0500	94	75-131	
1,2-Dichloroe	thane-D4		0.0496	0.0500	99	63-144	
Toluene-D8			0.0493	0.0500	99	80-117	

* Surrogate outside of Laboratory QC limits

- ** Surrogates outside limits; data and surrogates confirmed by reanalysis
- *** Poor recoveries due to dilution
- Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

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			1

BS / BSD Recoveries





Analytes	Analytes	Sample Result [A]	Added [B]	Spike Result [C]	Spike %R [D]	Added	Spike Duplicate Result [F]	Dup. %R [G]	RPD %	Limits %R	Limits %RPD	Flag
Chloride.		<5.00	250	242	16	250	242	16	0	90-110	20	
Analyst: JTR		D	ate Prepar	Date Prepared: 11/14/2016	16			Date A	nalyzed:	Date Analyzed: 11/14/2016		
Lab Batch ID: 3003850	Sample: 716102-1-BKS	BKS	Batch #: 1	1 :+ 1					Matrix: Water	Water		
Units: mg/L			BLAN	K/BLANK	SPIKE / F	SLANK S	BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	LICATE	RECOVI	ERY STUI	λ	

<0.00500	TCLP BTEX by SW 8260B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R G	RPD %	Control Limits %R	Control Limits %RPD	Flag
<0.00500 0.500 0.523 105 0.500 0.101 3 59-139 zene <0.00500	Benzene	<0.00500	0.500	0.525	105	0.500	0.509	102	3	66-142	20	
< < < 0.500 0.536 107 0.500 0.522 104 3 75-125 <	Toluene	<0.00500	0.500	0.523	105	0.500	0.506	101	3	59-139	20	
<0.0100 1.00 1.04 104 1.00 1.02 102 2 75-125 <0.00500	Ethylbenzene	<0.00500	0.500	0.536	107	0.500	0.522	104	3	75-125	20	
<0.00500 0.500 0.547 109 0.500 0.538 108 2 75-125	m,p-Xylenes	<0.0100	1.00	1.04	104	1.00	1.02	102	2	75-125	20	
	o-Xylene	<0.00500	0.500	0.547	109	0.500	0.538	108	2	75-125	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)| Blank Spike Recovery [D] = 100*(C)/[B] Blank Spike Duplicate Recovery [G] = 100*(F)/[E] All results are based on MDL and Validated for QC Purposes

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BS / BSD Recoveries





Date Prepared: 11/14/2016 Batch #: 1

Sample: 716061-1-BKS

Lab Batch ID: 3003836

mg/L

Units:

Work Order #: 539986

DEP

Analyst:

Project ID: Date Analyzed:

Date Analyzed: 11/14/2016 Matrix: Water BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000200	0.00200	0.00196	86	0.00200	0.00200	100	2	80-120	20	
Analyst: DEP	P	ate Prepar	Date Prepared: 11/14/2016	016			Date A	nalyzed:	Date Analyzed: 11/14/2016		
Lab Batch ID: 3003887 Sample: 716077-1-BKS	77-1-BKS	Batch #:	1#:1					Matrix: Water	Water		
Units: mg/L		BLAN	BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	λ	
TCI D Metals hy SW246 6010B	Rlank	Snike	Blank	Rlank	Cuilta	Rlant	Rth Sub		Control	Control Control	

	5			WINDOW		WINDIG	DEMNN/DEMNN STINE / DEMNN STINE DUT FICATE NECOVENT STUDI	-	NECO	INTO INT	10	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	TCLP Metals by SW846 6010B Analytes	Blank Sample Result [A]		Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	BIK. Spk Dup. %R G	RPD %	Control Limits %R	Control Limits %RPD	Fla
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Arsenic	<0.0100	1.00	1.00	100	1.00	1.02	102	2	80-120	20	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Barium	<0.0100	1.00	1.00	100	1.00	1.01	101	1	80-120	20	
<0.0100 1.00 0.966 97 1.00 0.968 97 0 80-120 <0.0100	Cadmium	<0.00500	1.00	0.985	66	1.00	0.984	86	0	80-120	20	
-0.0100 1.00 1.02 1.02 1.02 102 0 80-120 un <0.0200	Chromium	<0.0100	1.00	0.966	16	1.00	0.968	16	0	80-120	20	
um <0.0200 1.00 0.984 98 1.00 0.995 100 1 80-120 <0.0200	Lead	<0.0100	1.00	1.02	102	1.00	1.02	102	0	80-120	20	
<0.0200 0.500 0.503 101 0.500 0.499 100 1 80-120	Selenium	<0.0200	1.00	0.984	98	1.00	0.995	100	T	80-120	20	
	Silver	<0.0200	0.500	0.503	101	0.500	0.499	100	-	80-120	20	

Relative Percent Difference RPD = 200*[(C-F)/(C+F)] Blank Spike Recovery [D] = 100*(C)/[B] Blank Spike Duplicate Recovery [G] = 100*(F)/[E] All results are based on MDL and Validated for QC Purposes

Version: 1.%



BS / BSD Recoveries





/2016		STUDY	
e Analyzed: 11/08	Matrix: Solid	E RECOVERY	
Dat		LICAT	0.00
		PIKE DUP	1-10
		LANK S	
.91		SPIKE / B	-
ed: 11/08/201	#: 1	K/BLANK	110
ate Prepare	Batch	BLANI	
	S		
	Sample: 715881-1-BK		
ARM	0: 3003551	mg/kg	and the two trains
Analyst:	ab Batch II	Jnits:	
	ARM	ARM Date Prepared: 11/08/2016 D: 3003551 Sample: 715881-1-BKS Batch #: 1	ARM Date Prepared: 11/08/2016 D: 3003551 Sample: 715881-1-BKS Batch #: 1 mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLIC

TPH by SW 8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Spike Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	BIK. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1000	100	1000	1010	101	-	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1090	109	1000	1090	109	0	70-135	35	

Relative Percent Difference RPD = 200*(C-F)/(C+F)| Blank Spike Recovery [D] = 100*(C)/[B] Blank Spike Duplicate Recovery [G] = 100*(F)/[E] All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: Trunk MC-16



Work Order # .	930086
Lab Batch ID:	3003608
Date Analyzed:	11/09/2016
Reporting Units:	mg/kg

1 Batch #: QC-Sample ID: 539986-001 S Date Prepared: 11/09/2016

Analyst: MNR

Matrix: Soil

Project ID:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorga	Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		308	250	548:	96	250	559	100	3	00-110	20	
Lab Batch ID:	3003608	QC-Sample ID: 540004-004 S	540004-	-004 S	Ba	Batch #:	1 Matrix: Soil	c: Soil				
Date Analyzed:	11/09/2016	Date Prepared: 11/09/2016	11/09/20	016	An	Analyst: MNR	ANR					
Reporting Units:	mg/kg		M	ATRIX SPIKI	E/MAT	RIX SPI	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE REC	OVERY	STUDY		
Inorga	Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		1870	1250	3080	16	1250	3050	94	4	011-06	20	
Lab Batch ID:	3003850	QC-Sample ID: 540067-001 S	540067-	-001 S	Ba	Batch #:	1 Matrix: Soil	c: Soil			-	
Date Analyzed:	11/14/2016	Date Prepared: 11/14/2016	11/14/20	016	An	Analyst: JTR	TR					

Reporting Units: mg/L		N	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	E/MAT	ALX SPII	CE DUPLICA	FE REC	OVERY	STUDY		
TCLP BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added IBJ	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added E	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0:00500	0.500	0.524	105	0.500	0.524	105	0	66-142	20	
Toluene	<0.00500	0.500	0,521	104	0.500	0.512	102	2	59-139	20	
Ethylbenzene	<0.00500	0.500	0.535	107	0.500	0.532	901	1	75-125	20	
m,p-Xylenes	<00100>	1.00	1,05	105	1.00	1.02	102	3	75-125	20	
o-Xylene	<0.00500	0.500	0.524	105	0.500	0.549	110	5	75-125	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*([C-F)/(C+F)]

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable. N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Final 1.000

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Form 3 - MS / MSD Recoveries





: 539986	3003836	: 11/14/2016	ts: mg/L
Work Order #	Lab Batch ID:	Date Analyzed:	Reporting Units

Project ID: -Batch #: QC-Sample ID: 539905-001 S

Matrix: Soil

Analyst: DEP Date Prepared: 11/14/2016

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP	TCLP Mercury by SW 7470A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Spiked Result Sample Spike S [C] %R Added [D] [E]	Spiked Sample %R [D]	Spike Added [E]	Duplicate S Spiked Sample 1 Result [F]	Spiked Dup. %R G	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury		<0.000200	0.00200	0.00215	108	108 0.00200	0.00212	106	1	75-125	20	
Lab Batch ID: 3	3003836	QC-Sample ID: 540191-001 S	540191	-001 S	Ba	Batch #:	I Matrix	Matrix: Soil				
Date Analyzed: 1	11/14/2016	Date Prepared: 11/14/2016	: 11/14/2	910	An	Analyst: DEP	EP					
Reporting Units: n	mg/L		2	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TAM/2	RIX SPIF	KE DUPLICA	TE RECO	OVERY.	STUDY		
aron	TCI B Manual L. CW 7170 A	Parent		Spiked Sample Spiked	Spiked		Duplicate Spiked	Spiked		Control	Control Control	

	Sample Spike Result Added [A] [B]	Result Sample	Sample Spike %R Added [D] [E]	Spike Spiked Sample Added Result [F] [E]	Dup. %R [G]	RPD %	Limits L %R %	Limits %RPD	Flag
	<0.000200 0.00200	0.00213	107 0.00200	0.00212	106	0	75-125	20	
Lab Batch ID: 3003887 QC-Sample ID: 540125-001 S	-Sample ID: 54012	5-001 S	Batch #:	I Matrix: Solid	:: Solid				
Date Analyzed: 11/14/2016 Date Prepared: 11/14/2016	te Prepared: 11/14	2016	Analyst: DEP	DEP					
Reporting Units: mg/L MA		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	// MATRIX SP	IKE DUPLICA	TE RECO	VERY S	YOUTS		
TCI D Motols hv SW846 6010B Parent S	Parent	Spiked Sample Spiked	Spiked	Duplicate Spiked	Spiked		Control Control	Control	

TCLP Metals by SW846 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	<0.0500	5.00	5.15	103	5.00	5.09	102	1	80-120	20	
Barium	3.10	5.00	8.07	66	5.00	8.11	100	0	80-120	20	
Cadmium	<0.0250	5.00	4.97	66	5.00	5.00	100	1	80-120	20	
Chromium	<0.0500	5.00	4.75	95	5.00	4.77	95	0	80-120	20	
Lead	<0.0500	5.00	5.03	101	5.00	5.06	101	1	80-120	20	_
Selenium	<0.100	5.00	5.14	103	5.00	5.16	103	0	80-120	20	
Silver	<0.100	2.50	2.54	102	2.50	2,55	102	0	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*(C-F)/(C+F)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Final 1.000

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Form 3 - MS / MSD Recoveries

Project Name: Trunk MC-16



539986	3003551	11/08/2016	: mg/kg
Work Order # :	Lab Batch ID:	Date Analyzed:	Reporting Units

Project ID: Batch #: 1 Matrix: Soil

> QC- Sample ID: 539784-001 S Date Prepared: 11/08/2016

Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Sample Result [A]	Spike Added [B]	Result [C]	Sample %R [D]	Spike Added [E]	Spiked Sample Result [F]	Dup. %R [G]	RPD %	Limits %R	Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<pre><15.0</pre>	666	914	16	666	937	94	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	666	983	98	666	1010	101	e	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B Relative Percent Difference RPD = 200*((C-F)/(C+F))

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Final 1.000

Page 18 of 20

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantization Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Setting the Standard since 1990	XENCO
Stafford, Texas (281-240-4200)	LABORATORIES

Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Midland, Texas (432-704-5251) San Antonio, Texas (210-509-3334)

Phoenix, Arizona (480-355-0900)

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	Projec	Project Information	Î														
Project Name/Nun Trunk MC-1												<u> </u>					W ≂ Water S = Soil/Sed/Solid
Project Location:													-	·			GW =Ground Water
Eunice NM																	DW = Drinking Water
Invoice To:																	SW = Surface water
Same as ab	6V0						·,		ais		· · ·						SL = Sludge
									met								WI = Wipe
PO Number: NO	ne								8								0 = 01
			and a second second		() () () () () () () () () () () () () (WW= Waste Water
Collection				Number of	preserv	ed bottle				es							A = Air
		•••••			1												
Date			нсі	Acetate			NONE										Field Comments
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11/7/2016	9:00	S				_		×		-+			-				
11/7/2016	9:03	s						×		×							
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	Level	II Std QC			Level N	/ (Full Da	ta Pkg /r	aw data	-								
	X Level	III Std QC	+ Forms		TRRP L	evel IV											
	Level	3 (CLP Fo	rms)		UST / R	6-411								·			
	TRRP	Checklist															
											FED-EX	/UPS:	Fracklin	9 #			
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	Project Name/Nu Froject Localion: Eunice NM Finolet Localion: Sample Depth 10 11/7/2016 10 11/7/2017 10 11/7/2016 10 11/7/2017 10 11/7/2016 10 11/7/2016 11/7/2016 11/7/2016	Project Name/Number: Fruinice NMC-16 Project Location: Eunice NM Invoice To: Same as above Time A 11/7/2016 9:00 11/7/2016 9:00 11/7/	Project Name/Number: Project Name/Number: Funce INC:16 Fruince NM Eunice INM Envice To: Samp as a bove PO Number: NONE (432) 450-5542 PO Number: NONE 0 11/1/2016 8:57 10 11/1/2016 8:57 10 11/1/2016 9:03 10 11/1/2016 9:03 10 11/1/2016 9:03 10 11/1/2016 9:03 10 11/1/2016 9:03 10 11/1/2016 9:03 10 11/1/2016 9:03 10 11/1/2016 9:03 11 Level II Std QC 1 Level I Std QC 1 Level I Std QC 1 Sample 1 Level	Project Name/Number: Project Number: Invoite To: Same as above PO Number: Date Time Mattix border Date Time Matrix border Collection Date Time Matrix border Date Time Matrix border Date Time Date Date	Project Name/Number: Fruit: Burnice NIM Invoice To: Same as above Date Time Mathix bottles 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XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Energy Transfer- Midland Acceptable Temperature Range: 0 - 6 degC Date/ Time Received: 11/08/2016 02:55:00 PM Air and Metal samples Acceptable Range: Ambient Temperature Measuring device used : R8 Work Order #: 539986 Sample Receipt Checklist Comments #1 *Temperature of cooler(s)? 4.9 #2 *Shipping container in good condition? N/A #3 *Samples received on ice? Yes #4 *Custody Seal present on shipping container/ cooler? N/A #5 *Custody Seals intact on shipping container/ cooler? N/A #6 Custody Seals intact on sample bottles? N/A #7 *Custody Seals Signed and dated? N/A #8 *Chain of Custody present? Yes #9 Sample instructions complete on Chain of Custody? Yes #10 Any missing/extra samples? No #11 Chain of Custody signed when relinquished/ received? Yes #12 Chain of Custody agrees with sample label(s)? Yes #13 Container label(s) legible and intact? Yes #14 Sample matrix/ properties agree with Chain of Custody? Yes #15 Samples in proper container/ bottle? Yes #16 Samples properly preserved? Yes #17 Sample container(s) intact? Yes #18 Sufficient sample amount for indicated test(s)? Yes #19 All samples received within hold time? Yes #20 Subcontract of sample(s)? Yes Houston #21 VOC samples have zero headspace (less than 1/4 inch bubble)? N/A #22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for N/A samples for the analysis of HEM or HEM-SGT which are verified by the analysts. #23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH? N/A

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Date: 11/08/2016

Checklist reviewed by:

proat Kelsey Brooks

Date: 11/09/2016