RCVD via Email 8/26/2020

APPROVED

To: Cory Smith (NMOCD)

From: Steve Moskal (BP)

Date: 8/26/2020

Re: GCU Com H 180 – Groundwater Remediation Plan
API #3004507814, Unit Letter J, Section 28, T29N, R12W, NMPM
GPS Coordinate: 36.694777ºN, -108.103074ºW
Incident #: NAUTOFWCO00224

The GCU Com H 180 site is a recent plugged and abandoned natural gas production pad within the San Juan Basin Gas Field in San Juan County, New Mexico. The site is located on San Juan County property located south of the Sunray Casino in the Lee Acres area and approximately between 200-450 feet (**ft.**) north of the San Juan River.

A site separator pit was closed out beginning in April 1992 by removing impacted soils by excavation. Documentation for this work and subsequent groundwater monitoring data for the site have previously been submitted to New Mexico Oil Conservation Division (**NMOCD**). NMOCD had reviewed previous reporting and granted permanent closure with correspondence letter dated, February 24, 2017 (attached).

The most current activities were initiated during confirmation sampling of a 95 barrel below-grade tank closure on June 21, 2019. Discolored soils were observed, sampled, and later identified as impacted and exceeding NMOCD's closure standards per 19.15.17 NMAC. A chronological summary is included which explains all activities that followed this discovery (delineation, soil remediation, etc.).

Following the installation of four (4) groundwater monitor wells on September 19, 2019, groundwater measured on September 21, 2019 was recorded between four (4) to five and a half (5 ½) ft. below grade (**b.g.**). Subsurface soils consist of loose to firm silty sands that overlie a medium to course grained sand residing within the groundwater vadose zone. Deeper seated sand and gravel was encountered below the saturated sand interval between seven (7) to eight and half (8 ½) ft. b.g.

On December 4, 2019 the fourth quarter groundwater sampling from MW #102, MW #103, & MW #104 was performed. On December 11, 2019 NMOCD granted BPX approval of a remediation plan to pump and removed groundwater with conditions of approval. On December 12, 2019 the final laboratory report of 12/04/2019 sampling event was received. BPX submits initial remediation monthly report data to NMOCD. Subsequent sampling of MW #104 to validate was conducted on December 13, 2019 to verify the findings of the 12/04/2019 lab results. During the period of December 16th, 2019 to January 16th, 2020, MW #104 was purged/removed of approximately 28,809 gallons water collected and disposed of within on-site 95 barrel above-grade tank. The recovered water was subsequently hauled off site for disposal.

An additional monitor well was installed down gradient of the existing wells on March 11, 2020. MW-105 has been sampled twice thereafter (3/26/20 & 6/3/2020) with no detection of parameters of concern above remedial action levels. This monitor well serves as a monitor point to determine effectiveness of the proposed remediation plan as well as a monitoring point to determine movement of the contamination plume.

GROUNDWATER REMEDIATION PLAN – ACTIVE AIR SPARGE

BP proposes to commence the start up of an already installed air sparge system. The air sparge system will inject ambient air into the subsurface groundwater to increase the volatilization and oxidation of contaminants of concern using a 2 horsepower, electric powered, blower system. The system is fully intrinsically safe and designed for the prescribed application.

The primary point of sparging will be MW-104, identified as the only installed well with contaminants above remedial action levels. The remaining wells will be used as air injection/vent points depending on system performance. Field readings using a calibrated photoionization detector will be collected at startup and

periodically during system operation to determine effectiveness of contaminant movement through each vent well. The flow/focus of the air sparge system will be adjusted according to the field data.
Upon initial startup, the system will be checked and monitored daily for one week to ensure the system is operating and configured to optimal operation. This will include opening/closing sparge wells/vent wells and obtaining field readings as described above. Depending on findings and data, the system will be moved to weekly monitoring once BP is comfortable with the system adjustments.

To determine effectiveness of the system on groundwater, BP will sample MW-104 and MW-105 on a monthly basis for the first quarter to monitor levels of BTEX and effectiveness of the sparge system. MW-104 will target the plume, while MW-105 will monitor the contaminant plume movements. If it appears that the plume is decreasing in concentration and not actively moving, BP will move to quarterly groundwater monitoring.

The goal runtime of the system will be 90% run time, monitored with an onboard hour meter or use of the electric meter used to service only the air sparge system.

Following review of the monitoring and laboratory test results, a determination will be made for any continuation or modification to the remediation plan. BP will provide NMOCD of any proposed changes and request approval prior to execution. A final plan for closure sampling will be submitted as warranted. This will include decommissioning the system for and agreed period prior to final sampling to ensure no rebound of contaminants occurs with an inactive system.

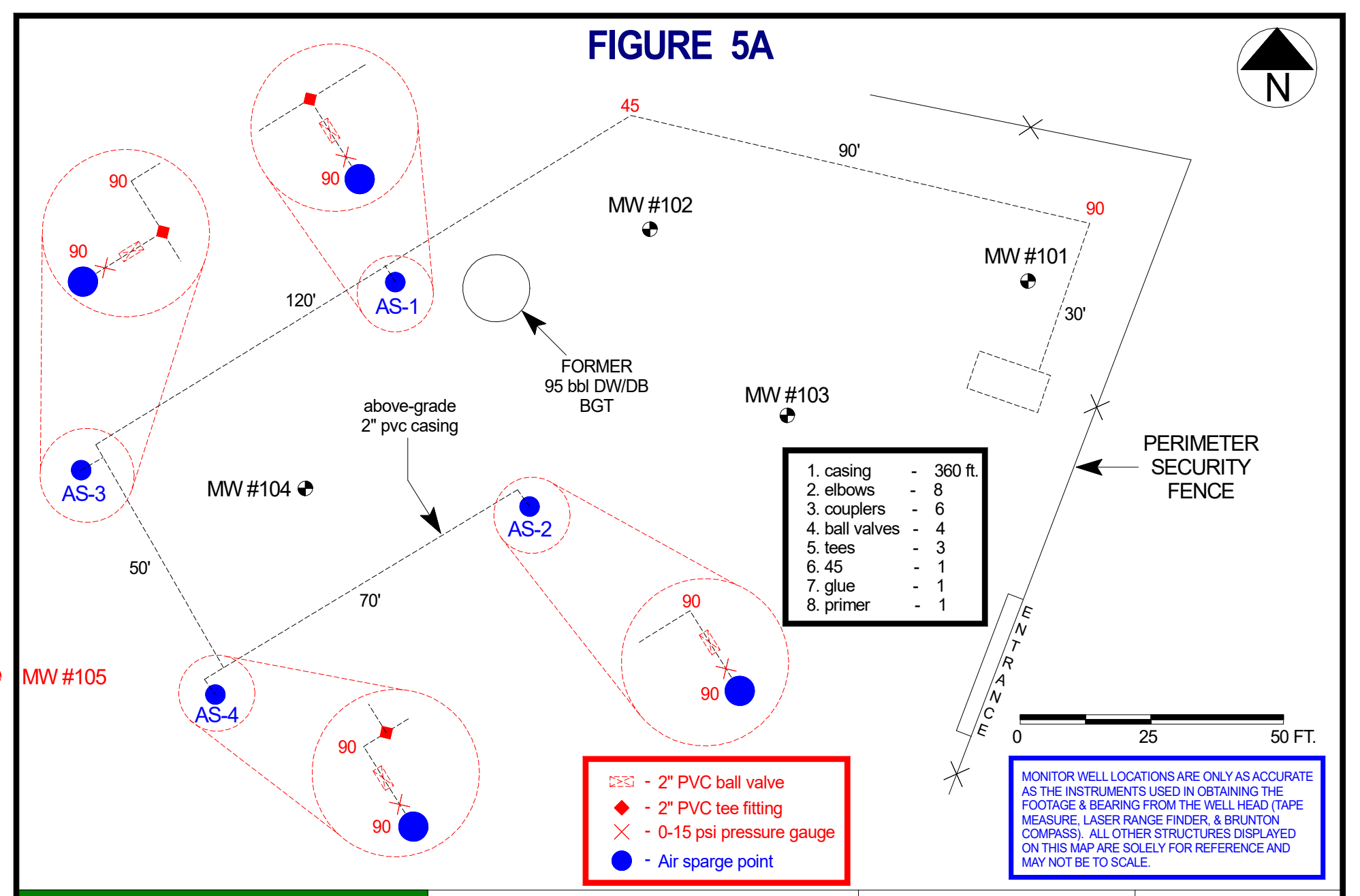
BP expects to monitor the site quarterly for eight consecutive quarters below NMWQCC guidelines to achieve closure per 20.6.2.3103 NMAC. BP anticipates 2-3 years of operations to meet closure standards.

REPORTING

NMOCD will be provided a quarterly summary of the laboratory test results during the first quarterly phase of the remediation activity. Thereafter, performance remediation will be reported on an annual basis.

Annual groundwater monitoring reports will be provided within 60 days of the each fourth quarter sampling event.

FIGURE 5A



1. casing	-	360 ft.
2. elbows	-	8
3. couplers	-	6
4. ball valves	-	4
5. tees	-	3
6. 45	-	1
7. glue	-	1
8. primer	-	1

- 2" PVC ball valve
- 2" PVC tee fitting
- 0-15 psi pressure gauge
- Air sparge point

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

BPX ENERGY INC.

GCU COM H # 180

NW/4 SE/4 SEC. 28, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: REMEDIATION

DRAWN BY: NJV

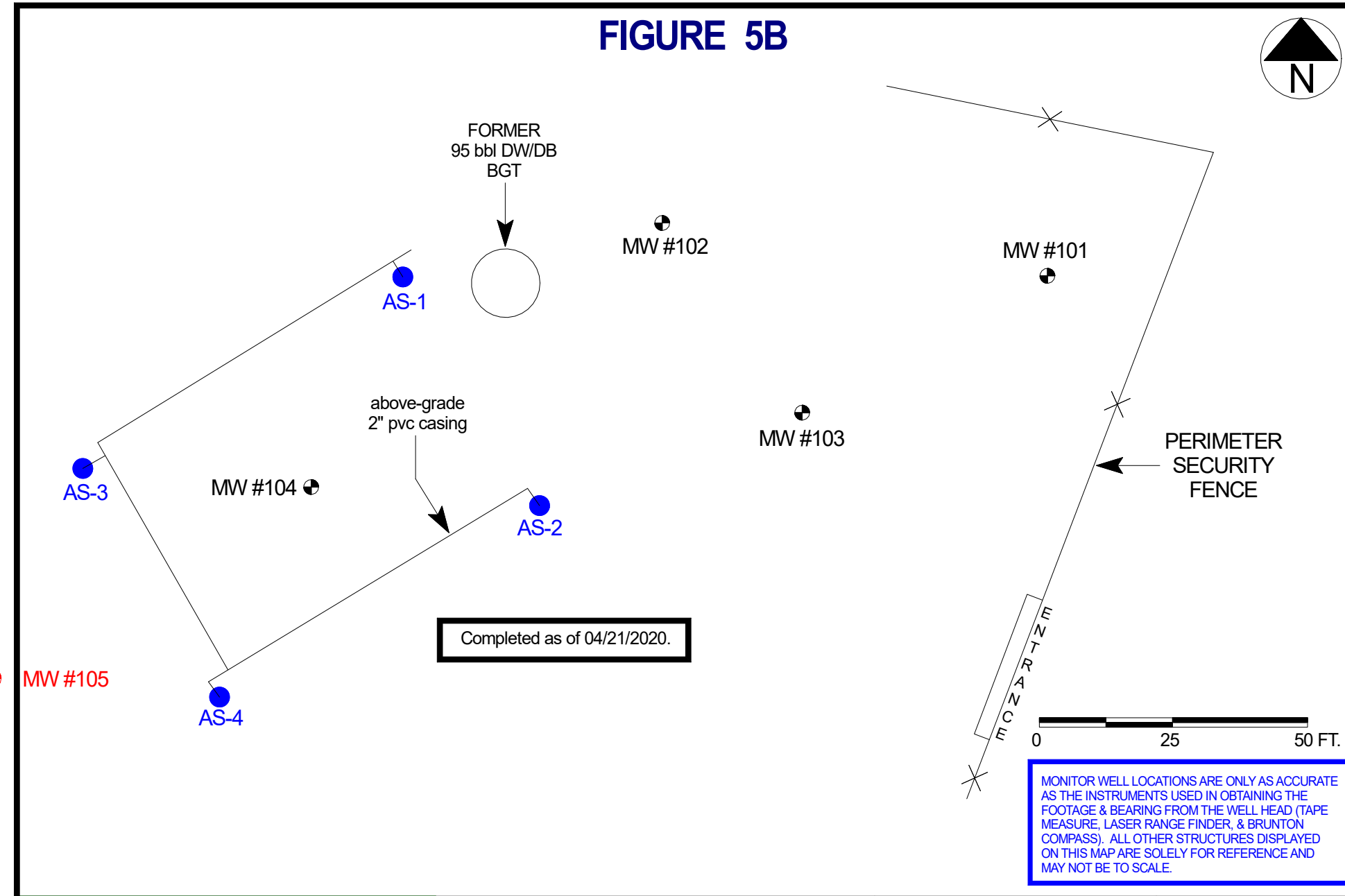
FILENAME: GCU COM H 180 FIG 5A (2020-04).SKF

DRAFTED: 04-20-2020

SITE MAP

APRIL 2020

FIGURE 5B



BPX ENERGY INC.

GCU COM H # 180

NW/4 SE/4 SEC. 28, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: REMEDIATION

DRAWN BY: NJV

FILENAME: GCU COM H 180 FIG 5B (2020-04).SKF

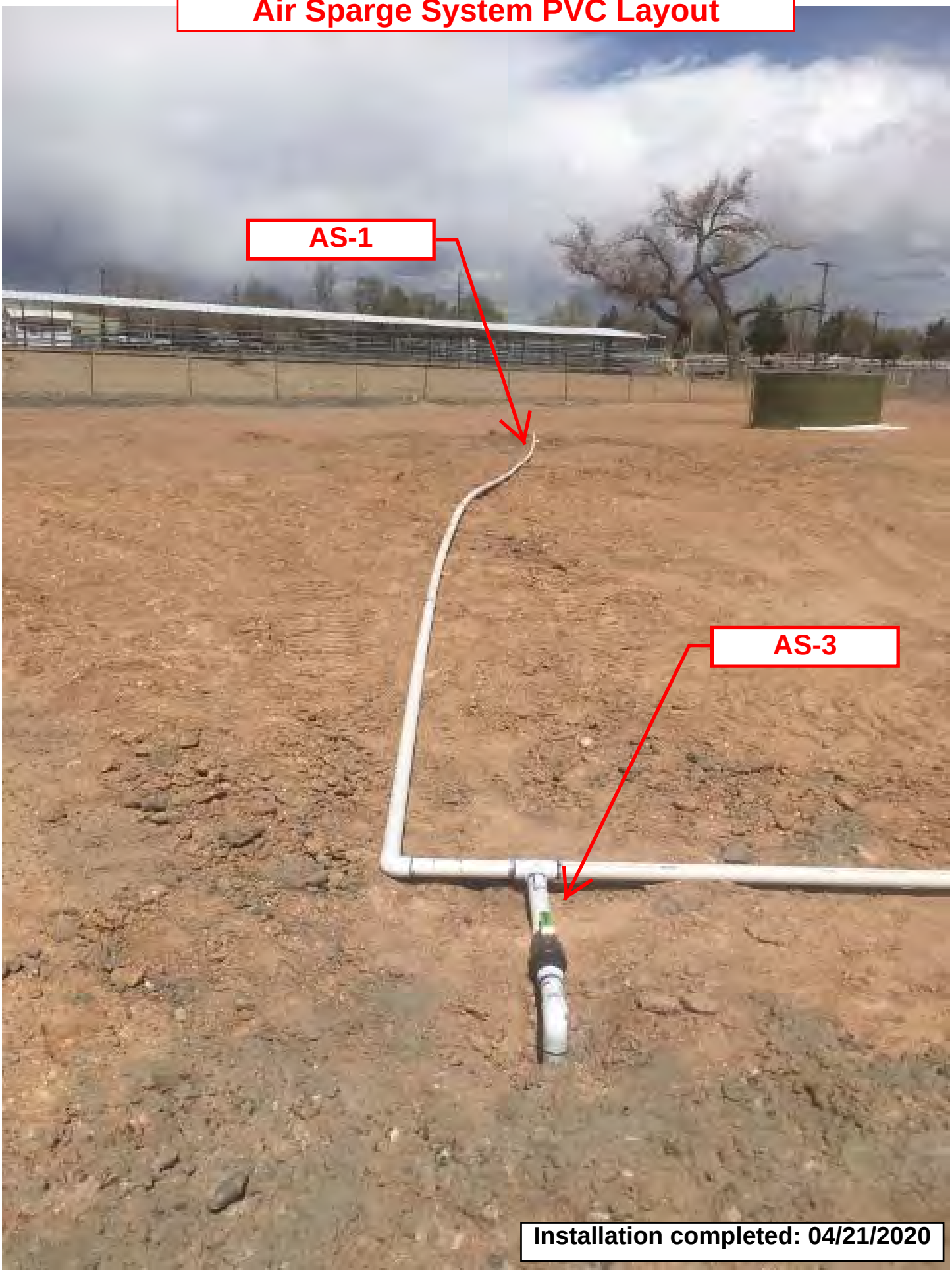
DRAFTED: 04-22-2020

SITE MAP

APRIL 2020

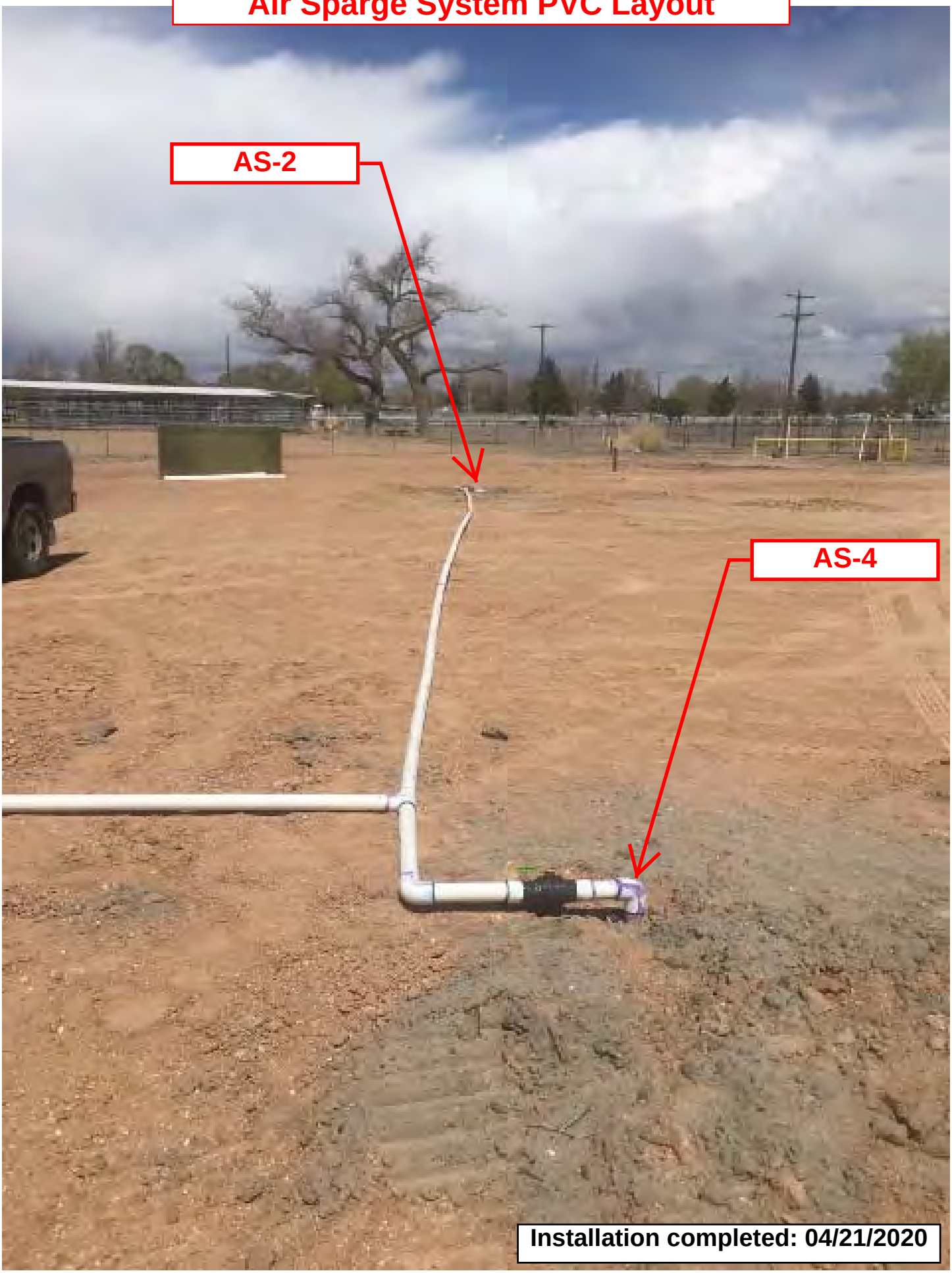
GCU COM H 180
Air Sparge System PVC Layout

GCU COM H 180
Air Sparge System PVC Layout



GCU COM H 180
Air Sparge System PVC Layout

GCU COM H 180
Air Sparge System PVC Layout

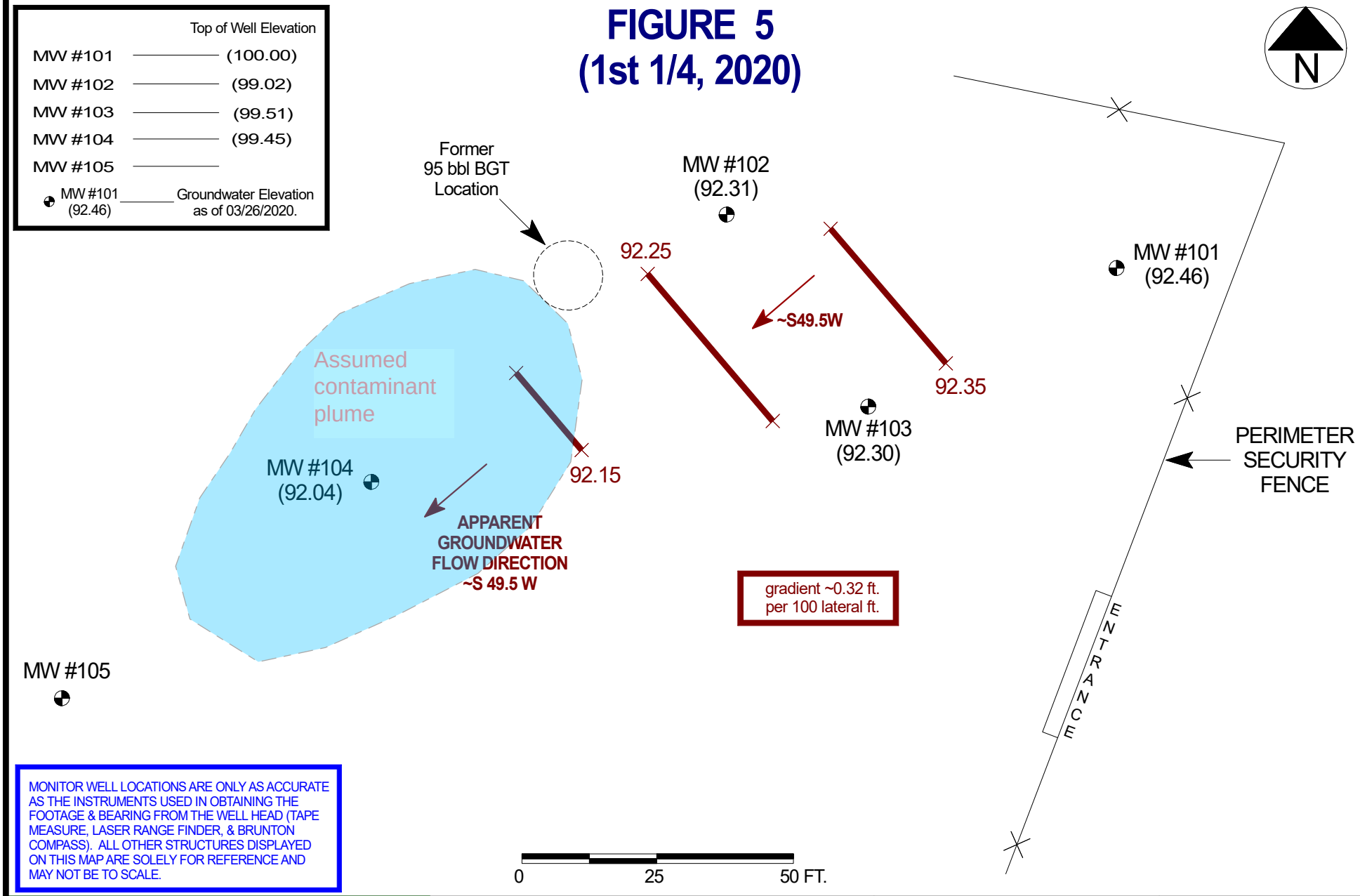


GCU COM H 180
Air Sparge System PVC Layout

FIGURE 5
(1st 1/4, 2020)

Top of Well Elevation	
MW #101	(100.00)
MW #102	(99.02)
MW #103	(99.51)
MW #104	(99.45)
MW #105	

MW #101 (92.46) ——— Groundwater Elevation as of 03/26/2020.



MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

BPX ENERGY INC.

GCU COM H # 180

NW/4 SE/4 SEC. 28, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: REMEDIATION

DRAWN BY: NJV

FILENAME: GCU COM H 180 GW FIG 5 (2020-03).SKF

DRAFTED: 04-02-2020

GROUNDWATER CONTOUR MAP

MAR. 2020

BPX ENERGY INC.

GROUNDWATER FIELD DATA & LAB BTEX / GENERAL CHEMISTRY RESULTS

GCU Com H # 180	**UNIT J, SEC. 28, T29N, R12W**
API #: 3004507814	**Incident #: NAUTOFWCO00224**

DRAFT DATE: July 6, 2020
Submitted by Blagg Engineering, Inc.

								BTEX US EPA METHOD 8021B or 8260B			
SAMPLE DATE	WELL NAME / NUMBER	DEPTH to WATER (feet)	WELL TOTAL LENGTH (feet)	Field pH	CONDUCT. (µmhos)	TEMP. (celcius)	Naphthalene (mg/L)	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)
09/23/19	MW #101	7.71	11.65	7.45	1,700	19.7	ND	ND	ND	ND	ND
09/23/19	MW #102	6.84	12.58	7.16	2,400	20.3	26	**140**	**5,000**	480	**3,400**
11/07/19	"	7.23	"	7.27	1,900	18.5	ND	3.7	300	41	320
12/04/19	"	6.97	"	7.06	2,600	14.6	ND	ND	280	36	260
03/26/20	"	6.71	"	7.05	2,700	12.7	ND	1.8	3.7	2.3	8.4
06/03/20	"	7.03	"	7.00	2,500	17.5	ND	2.2	8.7	4.5	11
09/23/19	MW #103	7.31	12.58	7.19	2,500	20.3	ND	ND	ND	43	110
12/04/19	"	7.46	"	7.12	2,700	14.4	ND	ND	ND	36	82
03/26/20	"	7.21	"	7.19	2,900	11.8	ND	ND	ND	61	160
06/03/20	"	7.54	"	7.05	2,900	17.1	ND	ND	ND	87	230
09/23/19	MW #104	7.46	12.20	7.23	2,300	19.9	ND	4.7	1.4	18	92
12/04/19	"	7.64	"	6.99	2,700	13.2	ND	**130**	ND	23	65
12/13/19	"	7.54	"	7.30	3,000	12.4	ND	**130**	2.2	23	63
12/23/19	"	7.64	"	7.22	2,400	11.6	ND	**110**	ND	35	110
01/22/20	"	7.50	"	7.27	3,300	9.2	ND	**270**	4.1	48	160
03/26/20	"	7.41	"	7.15	3,200	12.5	ND	**210**	8.0	87	310
06/03/20	"	7.74	"	7.15	3,000	17.6	ND	**24**	ND	4.8	78
03/26/20	MW #105	8.03	12.00	7.22	2,700	12.2	ND	ND	ND	ND	2.4
06/03/20	"	6.90		7.18	2,300	17.0	ND	ND	ND	ND	ND
							NMWQCC GROUNDWATER STANDARDS	**30**	**5**	**1,000**	**700**	**620**

SAMPLE DATE	WELL NAME /NUMBER	Lab pH	Fluoride (mg/L)	Chloride (mg/L)	Nitrate-N (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Lead (mg/L)	Iron (mg/L)	Manganese (mg/L)
09/23/19	MW #101	7.54	ND	100	ND	**2,300**	**4,100**	ND	0.027	**3.8**
09/23/19	MW #102	7.39	ND	130	ND	3,000	5,200	ND	0.14	5.0
12/04/19	"	-	-	-	-	2,900	5,220	-	-	5.7
09/23/19	MW #103	7.82	ND	130	ND	2,100	4,180	ND	0.10	2.6
09/23/19	MW #104	7.66	ND	130	ND	2,500	4,980	ND	0.029	3.8
03/26/20	MW #105	7.49	ND	140	ND	3,100	4,690	ND	0.19	5.9
NMWQCC GROUNDWATER STANDARDS			**1.6**	**250**	**10**	**600**	**1,000**	**0.015**	**1.0**	**0.2**

NOTES :

1) **ND Indicates not detected at the laboratory reporting limit**
2) **NMWQCC Indicates New Mexico Water Quality Control Commission**
   (levels not to exceed allowable threshold noted or background levels - MW #1 serves as background data when applicable
3) **Depth to Water measured from top of well casing**
4) **TDS - Total Dissolved Solids**
5) **mg/L - Milligrams per liter**
6) **µmhos - Micro ohms**
7) **NMWQCC pH allowable range between 6-9**
8) **µg/L - Micrograms per liter**
9) **(-) - Not analyzed**

GCU Com H 180
Laboratory
Reports

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

December 12, 2019

Erin Dunman

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX: (505) 632-3903

RE: GCU Com H 180 OrderNo.: 1912191

Dear Erin Dunman:

Hall Environmental Analysis Laboratory received 3 sample(s) on 12/5/2019 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 www.hallenvironmental.com 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #102
Project: GCU Com H 180
Collection Date: 12/4/2019 12:10:00 PM
Lab ID: 1912191-001
Matrix: AQUEOUS
Received Date: 12/5/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Sulfate	2900	50		mg/L	100	12/10/2019 3:31:28 AM	A65048
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **JMT**	
Total Dissolved Solids	5220	100	*D	mg/L	1	12/9/2019 2:50:00 PM	49196
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **pmf**	
Manganese	5.7	0.020		mg/L	10	12/10/2019 2:45:09 PM	A65071
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Toluene	280	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Ethylbenzene	36	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2,4-Trimethylbenzene	37	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,3,5-Trimethylbenzene	15	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Naphthalene	ND	10		µg/L	5	12/10/2019 12:29:24 AM	R65050
1-Methylnaphthalene	ND	20		µg/L	5	12/10/2019 12:29:24 AM	R65050
2-Methylnaphthalene	ND	20		µg/L	5	12/10/2019 12:29:24 AM	R65050
Acetone	ND	50		µg/L	5	12/10/2019 12:29:24 AM	R65050
Bromobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Bromodichloromethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Bromoform	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Bromomethane	ND	15		µg/L	5	12/10/2019 12:29:24 AM	R65050
2-Butanone	ND	50		µg/L	5	12/10/2019 12:29:24 AM	R65050
Carbon disulfide	ND	50		µg/L	5	12/10/2019 12:29:24 AM	R65050
Carbon Tetrachloride	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Chlorobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Chloroethane	ND	10		µg/L	5	12/10/2019 12:29:24 AM	R65050
Chloroform	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Chloromethane	ND	15		µg/L	5	12/10/2019 12:29:24 AM	R65050
2-Chlorotoluene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
4-Chlorotoluene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
cis-1,2-DCE	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	12/10/2019 12:29:24 AM	R65050
Dibromochloromethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Dibromomethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,3-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #102
Project: GCU Com H 180
Collection Date: 12/4/2019 12:10:00 PM
Lab ID: 1912191-001
Matrix: AQUEOUS
Received Date: 12/5/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
1,4-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Dichlorodifluoromethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1-Dichloroethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1-Dichloroethene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2-Dichloropropane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,3-Dichloropropane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
2,2-Dichloropropane	ND	10		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Hexachlorobutadiene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
2-Hexanone	ND	50		µg/L	5	12/10/2019 12:29:24 AM	R65050
Isopropylbenzene	7.0	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
4-Isopropyltoluene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
4-Methyl-2-pentanone	ND	50		µg/L	5	12/10/2019 12:29:24 AM	R65050
Methylene Chloride	ND	15		µg/L	5	12/10/2019 12:29:24 AM	R65050
n-Butylbenzene	ND	15		µg/L	5	12/10/2019 12:29:24 AM	R65050
n-Propylbenzene	7.2	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
sec-Butylbenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Styrene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
tert-Butylbenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	12/10/2019 12:29:24 AM	R65050
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
trans-1,2-DCE	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1,1-Trichloroethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,1,2-Trichloroethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Trichloroethene (TCE)	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Trichlorofluoromethane	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
1,2,3-Trichloropropane	ND	10		µg/L	5	12/10/2019 12:29:24 AM	R65050
Vinyl chloride	ND	5.0		µg/L	5	12/10/2019 12:29:24 AM	R65050
Xylenes, Total	260	7.5		µg/L	5	12/10/2019 12:29:24 AM	R65050
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	5	12/10/2019 12:29:24 AM	R65050
Surr: 4-Bromofluorobenzene	90.6	70-130		%Rec	5	12/10/2019 12:29:24 AM	R65050
Surr: Dibromofluoromethane	105	70-130		%Rec	5	12/10/2019 12:29:24 AM	R65050
Surr: Toluene-d8	97.9	70-130		%Rec	5	12/10/2019 12:29:24 AM	R65050

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #103
Project: GCU Com H 180
Collection Date: 12/4/2019 11:50:00 AM
Lab ID: 1912191-002
Matrix: AQUEOUS
Received Date: 12/5/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Toluene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Ethylbenzene	36	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2,4-Trimethylbenzene	45	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,3,5-Trimethylbenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Naphthalene	ND	10		µg/L	5	12/10/2019 1:54:25 AM	R65050
1-Methylnaphthalene	ND	20		µg/L	5	12/10/2019 1:54:25 AM	R65050
2-Methylnaphthalene	ND	20		µg/L	5	12/10/2019 1:54:25 AM	R65050
Acetone	ND	50		µg/L	5	12/10/2019 1:54:25 AM	R65050
Bromobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Bromodichloromethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Bromoform	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Bromomethane	ND	15		µg/L	5	12/10/2019 1:54:25 AM	R65050
2-Butanone	ND	50		µg/L	5	12/10/2019 1:54:25 AM	R65050
Carbon disulfide	ND	50		µg/L	5	12/10/2019 1:54:25 AM	R65050
Carbon Tetrachloride	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Chlorobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Chloroethane	ND	10		µg/L	5	12/10/2019 1:54:25 AM	R65050
Chloroform	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Chloromethane	ND	15		µg/L	5	12/10/2019 1:54:25 AM	R65050
2-Chlorotoluene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
4-Chlorotoluene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
cis-1,2-DCE	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	12/10/2019 1:54:25 AM	R65050
Dibromochloromethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Dibromomethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,3-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,4-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Dichlorodifluoromethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,1-Dichloroethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,1-Dichloroethene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2-Dichloropropane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,3-Dichloropropane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
2,2-Dichloropropane	ND	10		µg/L	5	12/10/2019 1:54:25 AM	R65050

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #103
Project: GCU Com H 180
Collection Date: 12/4/2019 11:50:00 AM
Lab ID: 1912191-002
Matrix: AQUEOUS
Received Date: 12/5/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
1,1-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Hexachlorobutadiene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
2-Hexanone	ND	50		µg/L	5	12/10/2019 1:54:25 AM	R65050
Isopropylbenzene	19	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
4-Isopropyltoluene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
4-Methyl-2-pentanone	ND	50		µg/L	5	12/10/2019 1:54:25 AM	R65050
Methylene Chloride	ND	15		µg/L	5	12/10/2019 1:54:25 AM	R65050
n-Butylbenzene	ND	15		µg/L	5	12/10/2019 1:54:25 AM	R65050
n-Propylbenzene	15	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
sec-Butylbenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Styrene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
tert-Butylbenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	12/10/2019 1:54:25 AM	R65050
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
trans-1,2-DCE	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,1,1-Trichloroethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,1,2-Trichloroethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Trichloroethene (TCE)	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Trichlorofluoromethane	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
1,2,3-Trichloropropane	ND	10		µg/L	5	12/10/2019 1:54:25 AM	R65050
Vinyl chloride	ND	5.0		µg/L	5	12/10/2019 1:54:25 AM	R65050
Xylenes, Total	82	7.5		µg/L	5	12/10/2019 1:54:25 AM	R65050
Surr: 1,2-Dichloroethane-d4	99.2	70-130		%Rec	5	12/10/2019 1:54:25 AM	R65050
Surr: 4-Bromofluorobenzene	89.3	70-130		%Rec	5	12/10/2019 1:54:25 AM	R65050
Surr: Dibromofluoromethane	104	70-130		%Rec	5	12/10/2019 1:54:25 AM	R65050
Surr: Toluene-d8	98.4	70-130		%Rec	5	12/10/2019 1:54:25 AM	R65050

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 12/4/2019 11:30:00 AM
Lab ID: 1912191-003
Matrix: AQUEOUS
Received Date: 12/5/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	130	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Toluene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Ethylbenzene	23	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2,4-Trimethylbenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,3,5-Trimethylbenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Naphthalene	ND	10		µg/L	5	12/10/2019 2:22:46 AM	R65050
1-Methylnaphthalene	ND	20		µg/L	5	12/10/2019 2:22:46 AM	R65050
2-Methylnaphthalene	ND	20		µg/L	5	12/10/2019 2:22:46 AM	R65050
Acetone	ND	50		µg/L	5	12/10/2019 2:22:46 AM	R65050
Bromobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Bromodichloromethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Bromoform	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Bromomethane	ND	15		µg/L	5	12/10/2019 2:22:46 AM	R65050
2-Butanone	ND	50		µg/L	5	12/10/2019 2:22:46 AM	R65050
Carbon disulfide	ND	50		µg/L	5	12/10/2019 2:22:46 AM	R65050
Carbon Tetrachloride	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Chlorobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Chloroethane	ND	10		µg/L	5	12/10/2019 2:22:46 AM	R65050
Chloroform	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Chloromethane	ND	15		µg/L	5	12/10/2019 2:22:46 AM	R65050
2-Chlorotoluene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
4-Chlorotoluene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
cis-1,2-DCE	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	12/10/2019 2:22:46 AM	R65050
Dibromochloromethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Dibromomethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,3-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,4-Dichlorobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Dichlorodifluoromethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,1-Dichloroethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,1-Dichloroethene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2-Dichloropropane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,3-Dichloropropane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
2,2-Dichloropropane	ND	10		µg/L	5	12/10/2019 2:22:46 AM	R65050

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 12/4/2019 11:30:00 AM
Lab ID: 1912191-003
Matrix: AQUEOUS
Received Date: 12/5/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
1,1-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Hexachlorobutadiene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
2-Hexanone	ND	50		µg/L	5	12/10/2019 2:22:46 AM	R65050
Isopropylbenzene	14	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
4-Isopropyltoluene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
4-Methyl-2-pentanone	ND	50		µg/L	5	12/10/2019 2:22:46 AM	R65050
Methylene Chloride	ND	15		µg/L	5	12/10/2019 2:22:46 AM	R65050
n-Butylbenzene	ND	15		µg/L	5	12/10/2019 2:22:46 AM	R65050
n-Propylbenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
sec-Butylbenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Styrene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
tert-Butylbenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	12/10/2019 2:22:46 AM	R65050
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
trans-1,2-DCE	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,1,1-Trichloroethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,1,2-Trichloroethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Trichloroethene (TCE)	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Trichlorofluoromethane	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
1,2,3-Trichloropropane	ND	10		µg/L	5	12/10/2019 2:22:46 AM	R65050
Vinyl chloride	ND	5.0		µg/L	5	12/10/2019 2:22:46 AM	R65050
Xylenes, Total	65	7.5		µg/L	5	12/10/2019 2:22:46 AM	R65050
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%Rec	5	12/10/2019 2:22:46 AM	R65050
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	5	12/10/2019 2:22:46 AM	R65050
Surr: Dibromofluoromethane	103	70-130		%Rec	5	12/10/2019 2:22:46 AM	R65050
Surr: Toluene-d8	100	70-130		%Rec	5	12/10/2019 2:22:46 AM	R65050

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912191**
12-Dec-19

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A65048**	RunNo: **65048**
Prep Date:	Analysis Date: **12/10/2019**	SeqNo: **2231597** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A65048**	RunNo: **65048**
Prep Date:	Analysis Date: **12/10/2019**	SeqNo: **2231598** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.4	0.50	10.00	0	94.3	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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912191**

12-Dec-19

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R65050** RunNo: **65050**

Prep Date: Analysis Date: **12/9/2019** SeqNo: **2231702** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.4	70	130			
Toluene	19	1.0	20.00	0	93.7	70	130			
Chlorobenzene	19	1.0	20.00	0	92.7	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	89.4	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.2	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.9	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID: **rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **PBW** Batch ID: **R65050** RunNo: **65050**

Prep Date: Analysis Date: **12/10/2019** SeqNo: **2231716** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912191**
12-Dec-19

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R65050**	RunNo: **65050**
Prep Date:	Analysis Date: **12/10/2019**	SeqNo: **2231716** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912191**
12-Dec-19

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R65050**	RunNo: **65050**
Prep Date:	Analysis Date: **12/10/2019**	SeqNo: **2231716** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.3	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.5	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	9.9		10.00		98.6	70	130			

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912191**
12-Dec-19

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A65071**	RunNo: **65071**
Prep Date:	Analysis Date: **12/10/2019**	SeqNo: **2232536** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 6010B: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A65071**	RunNo: **65071**
Prep Date:	Analysis Date: **12/10/2019**	SeqNo: **2232538** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.48	0.0020	0.5000	0	96.4	80	120			

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912191**
12-Dec-19

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB-49196**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **49196**	RunNo: **65040**
Prep Date: **12/6/2019**	Analysis Date: **12/9/2019**	SeqNo: **2231272** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-49196**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **49196**	RunNo: **65040**
Prep Date: **12/6/2019**	Analysis Date: **12/9/2019**	SeqNo: **2231273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

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 Limit

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: BLAGG | Work Order Number: 1912191 | RcptNo: 1

Received By: Erin Melendrez 12/5/2019 8:05:00 AM

Completed By: Desiree Dominguez 12/5/2019 9:16:35 AM

Reviewed By: 12/5/19

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☑	No ☐	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐ HNO3
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 1 (<2 or >12 unless noted)

Adjusted? yes

Checked by: JR 12/5/19

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions:

16. Additional remarks:

For sample 001C poured off from provided unpreserved bottle into 125mL. Metals bottle; filtered and added ~ 0.4mL. HNO3 for pH <2 - JR 12/5/19

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good	Not Present			

Chain-of-Custody Record

Client: BLAGG ENGR. / BPX ENERGY INC.

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

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

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name:
GCU Com H # 180

Project #:

Project Manager:
Erin Dunman

Sampler: Nelson Velez

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.4-0.4(C)=5.0°C

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1912191	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Sulfate - (SO_4)	pH	Total Dissolved Solids	8260B (VOA)	Dissolved Iron	Dissolved Lead	Dissolved Manganese		Air Bubbles (Y or N)
12/4/19	1210	WATER	MW # 102	40 ml VOA - 2	HCl & Cool	-001											✓					
12/4/19	1210	WATER	MW # 102	500 ml - 1	Cool	1								✓		✓				✓		
12/4/19	1150	WATER	MW # 103	40 ml VOA - 2	HCl & Cool	-002											✓					
12/4/19	1130	WATER	MW # 104	40 ml VOA - 2	HCl & Cool	-003											✓					

Date	Time	Relinquished by:	Received by:	Date	Time
12/4/19	1557		Christine Walker	12/4/19	1557
12/4/19	1814		courier	12/5/19	0805

Remarks:
BILL DIRECTLY TO BPX:
Contact: Erin Dunman/Steve Moskal **PO to be provided**
Added note: Please filter for manganese analysis & add HNO_3 preservative.

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

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

January 28, 2020

Erin Dunman

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX (505) 632-3903

RE: GCU Com H 180 OrderNo.: 2001900

Dear Erin Dunman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/23/2020 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 www.hallenvironmental.com 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 #NM0901

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 1/22/2020 11:55:00 AM
Lab ID: 2001900-001 **Matrix:** AQUEOUS **Received Date:** 1/23/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	270	20		µg/L	20	1/24/2020 2:50:00 PM	R66065
Toluene	4.1	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Ethylbenzene	48	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2,4-Trimethylbenzene	11	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,3,5-Trimethylbenzene	6.0	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Naphthalene	ND	4.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1-Methylnaphthalene	15	8.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
2-Methylnaphthalene	ND	8.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Acetone	ND	20		µg/L	2	1/23/2020 2:43:00 PM	R66010
Bromobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Bromodichloromethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Bromoform	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Bromomethane	ND	6.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
2-Butanone	ND	20		µg/L	2	1/23/2020 2:43:00 PM	R66010
Carbon disulfide	ND	20		µg/L	2	1/23/2020 2:43:00 PM	R66010
Carbon Tetrachloride	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Chlorobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Chloroethane	ND	4.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Chloroform	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Chloromethane	ND	6.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
2-Chlorotoluene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
4-Chlorotoluene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
cis-1,2-DCE	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Dibromochloromethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Dibromomethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2-Dichlorobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,3-Dichlorobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,4-Dichlorobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Dichlorodifluoromethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,1-Dichloroethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,1-Dichloroethene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2-Dichloropropane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,3-Dichloropropane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
2,2-Dichloropropane	ND	4.0		µg/L	2	1/23/2020 2:43:00 PM	R66010

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 1/22/2020 11:55:00 AM
Lab ID: 2001900-001
Matrix: AQUEOUS
Received Date: 1/23/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Hexachlorobutadiene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
2-Hexanone	ND	20		µg/L	2	1/23/2020 2:43:00 PM	R66010
Isopropylbenzene	12	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
4-Isopropyltoluene	4.1	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
4-Methyl-2-pentanone	ND	20		µg/L	2	1/23/2020 2:43:00 PM	R66010
Methylene Chloride	ND	6.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
n-Butylbenzene	ND	6.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
n-Propylbenzene	8.7	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
sec-Butylbenzene	2.5	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Styrene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
tert-Butylbenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
trans-1,2-DCE	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,1,1-Trichloroethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,1,2-Trichloroethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Trichloroethene (TCE)	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Trichlorofluoromethane	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
1,2,3-Trichloropropane	ND	4.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Vinyl chloride	ND	2.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Xylenes, Total	160	3.0		µg/L	2	1/23/2020 2:43:00 PM	R66010
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%Rec	2	1/23/2020 2:43:00 PM	R66010
Surr: 4-Bromofluorobenzene	98.1	70-130		%Rec	2	1/23/2020 2:43:00 PM	R66010
Surr: Dibromofluoromethane	94.1	70-130		%Rec	2	1/23/2020 2:43:00 PM	R66010
Surr: Toluene-d8	109	70-130		%Rec	2	1/23/2020 2:43:00 PM	R66010

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001900**

28-Jan-20

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R66010** RunNo: **66010**

Prep Date: Analysis Date: **1/23/2020** SeqNo: **2267293** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	24	1.0	20.00	0	121	70	130			
Chlorobenzene	18	1.0	20.00	0	92.3	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.0	70	130			
Surr: 4-Bromofluorobenzene	8.0		10.00		80.1	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	11		10.00		109	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **PBW** Batch ID: **R66010** RunNo: **66010**

Prep Date: Analysis Date: **1/23/2020** SeqNo: **2267294** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								

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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001900**

28-Jan-20

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R66010**	RunNo: **66010**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2267294** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001900**

28-Jan-20

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R66010**	RunNo: **66010**
Prep Date:	Analysis Date: **1/23/2020**	SeqNo: **2267294** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.2	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.5	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R66065**	RunNo: **66065**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2268957** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.6	70	130			
Surr: Toluene-d8	9.2		10.00		91.6	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R66065**	RunNo: **66065**
Prep Date:	Analysis Date: **1/24/2020**	SeqNo: **2268958** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.5	70	130			
Surr: Toluene-d8	9.2		10.00		91.7	70	130			

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 Limit

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: BLAGG | Work Order Number: 2001900 | RcptNo: 1

Received By: **Leah Baca** 1/23/2020 9:05:00 AM

Completed By: **Daniel Marquez** 1/23/2020 9:11:57 AM

Reviewed By: YG 1/23/20

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: SR 1/23/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.3	Good	Yes			

Chain-of-Custody Record

Client: BLAGG ENGR. / BPX ENERGY INC.

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

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

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 01/24/2020

Project Name:
GCU Com H # 180

Project #:

Project Manager:
Erin Dunman

Sampler: **Nelson Velez**

On Ice: ☑ Yes ☐ No

Sample Temperature: 0.3 - 0.6 = 0.3C

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2001900	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Sulfate - (SO_4)	pH	Total Dissolved Solids	8260B (VOA)	Dissolved Iron	Dissolved Lead	Dissolved Manganese		Air Bubbles (Y or N)
1/22/20	1155	WATER	MW # 104	40 ml VOA - 2	HCl & Cool	001											V					

Date: 1/22/20 Time: 1713 Relinquished by: [signature] Received by: [signature] Date: 1/22/20 Time: 1713

Date: 1/22/20 Time: 1811 Relinquished by: [signature] Received by: [signature] Date: 1/23/20 Time: 0905

Remarks:
BILL DIRECTLY TO BPX:
Contact: Erin Dunman/Steve Moskal
PO: BPX to provide in near future.

Custody seal on cooler 1/23/2020

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

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

April 07, 2020

Erin Dunman

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL:
FAX

RE: GCU Com H 180 OrderNo.: 2003C36

Dear Erin Dunman:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/27/2020 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 www.hallenvironmental.com 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #102
Project: GCU Com H 180
Collection Date: 3/26/2020 11:30:00 AM
Lab ID: 2003C36-001
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	1.8	1.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Toluene	3.7	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Ethylbenzene	2.3	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2,4-Trimethylbenzene	7.0	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Naphthalene	ND	4.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1-Methylnaphthalene	ND	8.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
2-Methylnaphthalene	ND	8.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Acetone	ND	20		µg/L	2	4/3/2020 9:21:00 PM	R67816
Bromobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Bromodichloromethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Bromoform	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Bromomethane	ND	6.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
2-Butanone	ND	20		µg/L	2	4/3/2020 9:21:00 PM	R67816
Carbon disulfide	ND	20		µg/L	2	4/3/2020 9:21:00 PM	R67816
Carbon Tetrachloride	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Chlorobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Chloroethane	ND	4.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Chloroform	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Chloromethane	ND	6.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
2-Chlorotoluene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
4-Chlorotoluene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
cis-1,2-DCE	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Dibromochloromethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Dibromomethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2-Dichlorobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,3-Dichlorobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,4-Dichlorobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Dichlorodifluoromethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,1-Dichloroethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,1-Dichloroethene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2-Dichloropropane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,3-Dichloropropane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
2,2-Dichloropropane	ND	4.0		µg/L	2	4/3/2020 9:21:00 PM	R67816

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
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #102
Project: GCU Com H 180
Collection Date: 3/26/2020 11:30:00 AM
Lab ID: 2003C36-001
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Hexachlorobutadiene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
2-Hexanone	ND	20		µg/L	2	4/3/2020 9:21:00 PM	R67816
Isopropylbenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
4-Isopropyltoluene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
4-Methyl-2-pentanone	ND	20		µg/L	2	4/3/2020 9:21:00 PM	R67816
Methylene Chloride	ND	6.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
n-Butylbenzene	ND	6.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
n-Propylbenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
sec-Butylbenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Styrene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
tert-Butylbenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
trans-1,2-DCE	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,1,1-Trichloroethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,1,2-Trichloroethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Trichloroethene (TCE)	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Trichlorofluoromethane	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
1,2,3-Trichloropropane	ND	4.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Vinyl chloride	ND	2.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Xylenes, Total	8.4	3.0		µg/L	2	4/3/2020 9:21:00 PM	R67816
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	2	4/3/2020 9:21:00 PM	R67816
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	2	4/3/2020 9:21:00 PM	R67816
Surr: Dibromofluoromethane	109	70-130		%Rec	2	4/3/2020 9:21:00 PM	R67816
Surr: Toluene-d8	102	70-130		%Rec	2	4/3/2020 9:21:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #103
Project: GCU Com H 180
Collection Date: 3/26/2020 11:10:00 AM
Lab ID: 2003C36-002
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Toluene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Ethylbenzene	61	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2,4-Trimethylbenzene	60	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Naphthalene	ND	2.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1-Methylnaphthalene	13	4.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
2-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Acetone	ND	10		µg/L	1	4/3/2020 9:44:00 PM	R67816
Bromobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Bromodichloromethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Bromoform	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Bromomethane	ND	3.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
2-Butanone	ND	10		µg/L	1	4/3/2020 9:44:00 PM	R67816
Carbon disulfide	ND	10		µg/L	1	4/3/2020 9:44:00 PM	R67816
Carbon Tetrachloride	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Chlorobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Chloroethane	ND	2.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Chloroform	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Chloromethane	ND	3.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
2-Chlorotoluene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
4-Chlorotoluene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
cis-1,2-DCE	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Dibromochloromethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Dibromomethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,1-Dichloroethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,1-Dichloroethene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2-Dichloropropane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,3-Dichloropropane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
2,2-Dichloropropane	ND	2.0		µg/L	1	4/3/2020 9:44:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #103
Project: GCU Com H 180
Collection Date: 3/26/2020 11:10:00 AM
Lab ID: 2003C36-002
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Hexachlorobutadiene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
2-Hexanone	ND	10		µg/L	1	4/3/2020 9:44:00 PM	R67816
Isopropylbenzene	20	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
4-Isopropyltoluene	4.7	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
4-Methyl-2-pentanone	ND	10		µg/L	1	4/3/2020 9:44:00 PM	R67816
Methylene Chloride	ND	3.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
n-Butylbenzene	ND	3.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
n-Propylbenzene	17	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
sec-Butylbenzene	5.7	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Styrene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
tert-Butylbenzene	1.4	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
trans-1,2-DCE	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Trichlorofluoromethane	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Vinyl chloride	ND	1.0		µg/L	1	4/3/2020 9:44:00 PM	R67816
Xylenes, Total	160	1.5		µg/L	1	4/3/2020 9:44:00 PM	R67816
Surr: 1,2-Dichloroethane-d4	114	70-130		%Rec	1	4/3/2020 9:44:00 PM	R67816
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	4/3/2020 9:44:00 PM	R67816
Surr: Dibromofluoromethane	116	70-130		%Rec	1	4/3/2020 9:44:00 PM	R67816
Surr: Toluene-d8	111	70-130		%Rec	1	4/3/2020 9:44:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 3/26/2020 12:40:00 PM
Lab ID: 2003C36-003
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	210	20		µg/L	20	4/3/2020 10:07:00 PM	R67816
Toluene	8.0	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Ethylbenzene	87	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2,4-Trimethylbenzene	9.4	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,3,5-Trimethylbenzene	5.1	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Naphthalene	ND	4.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1-Methylnaphthalene	13	8.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
2-Methylnaphthalene	ND	8.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Acetone	ND	20		µg/L	2	4/3/2020 10:31:00 PM	R67816
Bromobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Bromodichloromethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Bromoform	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Bromomethane	ND	6.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
2-Butanone	ND	20		µg/L	2	4/3/2020 10:31:00 PM	R67816
Carbon disulfide	ND	20		µg/L	2	4/3/2020 10:31:00 PM	R67816
Carbon Tetrachloride	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Chlorobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Chloroethane	ND	4.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Chloroform	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Chloromethane	ND	6.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
2-Chlorotoluene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
4-Chlorotoluene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
cis-1,2-DCE	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Dibromochloromethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Dibromomethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2-Dichlorobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,3-Dichlorobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,4-Dichlorobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Dichlorodifluoromethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,1-Dichloroethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,1-Dichloroethene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2-Dichloropropane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,3-Dichloropropane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
2,2-Dichloropropane	ND	4.0		µg/L	2	4/3/2020 10:31:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 3/26/2020 12:40:00 PM
Lab ID: 2003C36-003
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Hexachlorobutadiene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
2-Hexanone	ND	20		µg/L	2	4/3/2020 10:31:00 PM	R67816
Isopropylbenzene	20	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
4-Isopropyltoluene	5.0	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
4-Methyl-2-pentanone	ND	20		µg/L	2	4/3/2020 10:31:00 PM	R67816
Methylene Chloride	ND	6.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
n-Butylbenzene	ND	6.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
n-Propylbenzene	13	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
sec-Butylbenzene	3.1	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Styrene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
tert-Butylbenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
trans-1,2-DCE	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,1,1-Trichloroethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,1,2-Trichloroethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Trichloroethene (TCE)	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Trichlorofluoromethane	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
1,2,3-Trichloropropane	ND	4.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Vinyl chloride	ND	2.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Xylenes, Total	310	3.0		µg/L	2	4/3/2020 10:31:00 PM	R67816
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	2	4/3/2020 10:31:00 PM	R67816
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	2	4/3/2020 10:31:00 PM	R67816
Surr: Dibromofluoromethane	107	70-130		%Rec	2	4/3/2020 10:31:00 PM	R67816
Surr: Toluene-d8	97.4	70-130		%Rec	2	4/3/2020 10:31:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #105
Project: GCU Com H 180
Collection Date: 3/26/2020 12:05:00 PM
Lab ID: 2003C36-004
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS						Analyst: **ELS**	
Lead	ND	0.0025		mg/L	5	3/30/2020 11:52:42 AM	A67696
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Fluoride	ND	0.50		mg/L	5	4/1/2020 12:48:49 PM	R67774
Chloride	140	10		mg/L	20	3/27/2020 8:45:54 PM	R67641
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	3/27/2020 8:33:30 PM	R67641
Sulfate	3100	50	*	mg/L	100	4/1/2020 1:01:42 PM	R67774
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	4690	200	*D	mg/L	1	4/6/2020 12:28:00 PM	51511
SM4500-H+B / 9040C: PH						Analyst: **vfs**	
pH	7.49		H	pH units	1	3/30/2020 1:15:16 PM	R67685
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **bcv**	
Iron	0.19	0.020		mg/L	1	3/30/2020 4:05:59 PM	A67716
Manganese	5.9	0.020	*	mg/L	10	3/31/2020 3:19:41 PM	C67741
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Toluene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Ethylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Naphthalene	ND	2.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
2-Methylnaphthalene	ND	4.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Acetone	ND	10		µg/L	1	4/3/2020 10:54:00 PM	R67816
Bromobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Bromodichloromethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Bromoform	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Bromomethane	ND	3.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
2-Butanone	ND	10		µg/L	1	4/3/2020 10:54:00 PM	R67816
Carbon disulfide	ND	10		µg/L	1	4/3/2020 10:54:00 PM	R67816
Carbon Tetrachloride	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Chlorobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Chloroethane	ND	2.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Chloroform	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Chloromethane	ND	3.0		µg/L	1	4/3/2020 10:54:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #105
Project: GCU Com H 180
Collection Date: 3/26/2020 12:05:00 PM
Lab ID: 2003C36-004
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
2-Chlorotoluene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
4-Chlorotoluene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
cis-1,2-DCE	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Dibromochloromethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Dibromomethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,3-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,4-Dichlorobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Dichlorodifluoromethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1-Dichloroethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1-Dichloroethene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2-Dichloropropane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,3-Dichloropropane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
2,2-Dichloropropane	ND	2.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1-Dichloropropene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Hexachlorobutadiene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
2-Hexanone	ND	10		µg/L	1	4/3/2020 10:54:00 PM	R67816
Isopropylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
4-Isopropyltoluene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
4-Methyl-2-pentanone	ND	10		µg/L	1	4/3/2020 10:54:00 PM	R67816
Methylene Chloride	ND	3.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
n-Butylbenzene	ND	3.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
n-Propylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
sec-Butylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Styrene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
tert-Butylbenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
trans-1,2-DCE	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1,1-Trichloroethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
1,1,2-Trichloroethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Trichloroethene (TCE)	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Trichlorofluoromethane	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #105
Project: GCU Com H 180
Collection Date: 3/26/2020 12:05:00 PM
Lab ID: 2003C36-004
Matrix: AQUEOUS
Received Date: 3/27/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,2,3-Trichloropropane	ND	2.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Vinyl chloride	ND	1.0		µg/L	1	4/3/2020 10:54:00 PM	R67816
Xylenes, Total	2.4	1.5		µg/L	1	4/3/2020 10:54:00 PM	R67816
Surr: 1,2-Dichloroethane-d4	115	70-130		%Rec	1	4/3/2020 10:54:00 PM	R67816
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	4/3/2020 10:54:00 PM	R67816
Surr: Dibromofluoromethane	109	70-130		%Rec	1	4/3/2020 10:54:00 PM	R67816
Surr: Toluene-d8	95.0	70-130		%Rec	1	4/3/2020 10:54:00 PM	R67816

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

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A67716**	RunNo: **67716**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337898** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A67716**	RunNo: **67716**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337899** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.50	0.020	0.5000	0	101	85	115			

Sample ID: **LLLCS-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A67716**	RunNo: **67716**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337900** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.024	0.020	0.02000	0	120	50	150			

Sample ID: **2003C36-004CMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW #105**	Batch ID: **A67716**	RunNo: **67716**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.64	0.020	0.5000	0.1851	91.3	70	130			

Sample ID: **2003C36-004CMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW #105**	Batch ID: **A67716**	RunNo: **67716**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.65	0.020	0.5000	0.1851	92.7	70	130	1.10	20	

Sample ID: **MB-C**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **C67741**	RunNo: **67741**
Prep Date:	Analysis Date: **3/31/2020**	SeqNo: **2338731** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **LCS-C**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **C67741**	RunNo: **67741**
Prep Date:	Analysis Date: **3/31/2020**	SeqNo: **2338733** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.50	0.0020	0.5000	0	100	85	115			

Sample ID: **LLLCS-C**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **C67741**	RunNo: **67741**
Prep Date:	Analysis Date: **3/31/2020**	SeqNo: **2338734** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020	0.002000	0	98.8	50	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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A67696**	RunNo: **67696**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337178** Units: **mg/L**

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

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A67696**	RunNo: **67696**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337180** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A67696**	RunNo: **67696**
Prep Date:	Analysis Date: **3/30/2020**	SeqNo: **2337182** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.013	0.00050	0.01250	0	106	85	115			

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R67641**	RunNo: **67641**
Prep Date:	Analysis Date: **3/27/2020**	SeqNo: **2335160** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R67641**	RunNo: **67641**
Prep Date:	Analysis Date: **3/27/2020**	SeqNo: **2335161** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	100	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R67774**	RunNo: **67774**
Prep Date:	Analysis Date: **4/1/2020**	SeqNo: **2340757** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R67774**	RunNo: **67774**
Prep Date:	Analysis Date: **4/1/2020**	SeqNo: **2340758** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Sulfate	9.5	0.50	10.00	0	95.1	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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R67816** RunNo: **67816**
Prep Date: Analysis Date: **4/3/2020** SeqNo: **2343109** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	97.6	70	130			
Chlorobenzene	19	1.0	20.00	0	95.0	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	112	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R67816** RunNo: **67816**
Prep Date: Analysis Date: **4/3/2020** SeqNo: **2343110** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R67816**	RunNo: **67816**
Prep Date:	Analysis Date: **4/3/2020**	SeqNo: **2343110** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R67816**	RunNo: **67816**
Prep Date:	Analysis Date: **4/3/2020**	SeqNo: **2343110** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.7		10.00		96.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **2003C36-004b dup** SampType: **dup** TestCode: **SM4500-H+B / 9040C: pH**
Client ID: **MW #105** Batch ID: **R67685** RunNo: **67685**
Prep Date: Analysis Date: **3/30/2020** SeqNo: **2337759** Units: **pH units**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.50									H

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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C36**
07-Apr-20

Client: Blagg Engineering
Project: GCU Com H 180

Sample ID: **MB-51511**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **51511**	RunNo: **67882**
Prep Date: **4/2/2020**	Analysis Date: **4/6/2020**	SeqNo: **2345269** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-51511**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **51511**	RunNo: **67882**
Prep Date: **4/2/2020**	Analysis Date: **4/6/2020**	SeqNo: **2345270** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

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 Limit

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: **BLAGG** Work Order Number: **2003C36** RcptNo: **1**

Received By: **Juan Rojas** **3/27/2020 8:10:00 AM** Juan Rojas

Completed By: **Leah Baca** **3/27/2020 2:32:07 PM** Leah Baca

Reviewed By: JR 3/27/20

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
5. Sample(s) in proper container(s)? Not frozen Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preserved added to bottles? Yes ☑ No ☐ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐ HNO3
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 1 (<2 or >12 unless noted)
Adjusted? YES
Checked by: DAD 3/27/20

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

Filtered and added 0.4 mL of HNO3 to -004B for Metals analysis DAD 3/27/20

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	-0.6	Good				

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

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

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name:
GCU Com H # 180

Project #:

Project Manager:
Erin Dunman

Sampler:

On Ice: ☑ Yes ☐ No 0.1-0=0.1

Sample Temperature: -0.6-0=-0.6

Not Frozen JR 3/27/20

HEAL No. 2003C36

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, SO_4)	pH	Total Dissolved Solids	8260B (VOA)	Dissolved Iron	Dissolved Lead	Dissolved Manganese		Air Bubbles (Y or N)
	~~725~~	~~WATER~~	~~MW # 101~~	~~40 ml VOA - 2~~	~~HCl & Cool~~												~~√~~					
3/26/20	1130	WATER	MW # 102	40 ml VOA - 2	HCl & Cool	-001											√					
3/26/20	1110	WATER	MW # 103	40 ml VOA - 2	HCl & Cool	-002											√					
3/26/20	1240	WATER	MW # 104	40 ml VOA - 2	HCl & Cool	-003											√					
3/26/20	1205	WATER	MW # 105	40 ml VOA - 2	HCl & Cool	-004											√					
3/26/20	1205	WATER	MW # 105	1000 ml - 1	Cool	1								√	√	√		√	√	√		

Analysis Request

Date	Time	Relinquished by:	Received by:	Date	Time
3/24/20	1508			3/24/20	1508
3/26/20	1813		courier	3/27/20	8:10

Remarks:
BILL DIRECTLY TO BPX:
Contacts: Erin Dunman/Steve Moskal PO to be provided
Added note: Please filter for Iron, Lead, & Manganese analyses & add HNO_3 preservative.

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

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

June 15, 2020

Erin Dunman

Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX: (505) 632-3903

RE: GCU Com H 180 OrderNo.: 2006318

Dear Erin Dunman:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/5/2020 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 www.hallenvironmental.com 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #102
Project: GCU Com H 180
Collection Date: 6/3/2020 9:25:00 AM
Lab ID: 2006318-001 **Matrix:** AQUEOUS **Received Date:** 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	2.2	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Toluene	8.7	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Ethylbenzene	4.5	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2,4-Trimethylbenzene	7.5	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Naphthalene	ND	2.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1-Methylnaphthalene	ND	4.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
2-Methylnaphthalene	ND	4.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Acetone	ND	10		µg/L	1	6/8/2020 8:51:00 PM	R69472
Bromobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Bromodichloromethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Bromoform	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Bromomethane	ND	3.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
2-Butanone	ND	10		µg/L	1	6/8/2020 8:51:00 PM	R69472
Carbon disulfide	ND	10		µg/L	1	6/8/2020 8:51:00 PM	R69472
Carbon Tetrachloride	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Chlorobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Chloroethane	ND	2.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Chloroform	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Chloromethane	ND	3.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
2-Chlorotoluene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
4-Chlorotoluene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
cis-1,2-DCE	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Dibromochloromethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Dibromomethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,3-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,1-Dichloroethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,1-Dichloroethene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2-Dichloropropane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,3-Dichloropropane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
2,2-Dichloropropane	ND	2.0		µg/L	1	6/8/2020 8:51:00 PM	R69472

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
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #102
Project: GCU Com H 180
Collection Date: 6/3/2020 9:25:00 AM
Lab ID: 2006318-001 **Matrix:** AQUEOUS **Received Date:** 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Hexachlorobutadiene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
2-Hexanone	ND	10		µg/L	1	6/8/2020 8:51:00 PM	R69472
Isopropylbenzene	1.1	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
4-Isopropyltoluene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
4-Methyl-2-pentanone	ND	10		µg/L	1	6/8/2020 8:51:00 PM	R69472
Methylene Chloride	ND	3.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
n-Butylbenzene	ND	3.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
n-Propylbenzene	1.3	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
sec-Butylbenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Styrene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
tert-Butylbenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
trans-1,2-DCE	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Trichlorofluoromethane	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
1,2,3-Trichloropropane	ND	2.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Vinyl chloride	ND	1.0		µg/L	1	6/8/2020 8:51:00 PM	R69472
Xylenes, Total	11	1.5		µg/L	1	6/8/2020 8:51:00 PM	R69472
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	6/8/2020 8:51:00 PM	R69472
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/8/2020 8:51:00 PM	R69472
Surr: Dibromofluoromethane	101	70-130		%Rec	1	6/8/2020 8:51:00 PM	R69472
Surr: Toluene-d8	110	70-130		%Rec	1	6/8/2020 8:51:00 PM	R69472

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #103
Project: GCU Com H 180
Collection Date: 6/3/2020 8:55:00 AM
Lab ID: 2006318-002 **Matrix:** AQUEOUS **Received Date:** 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Toluene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Ethylbenzene	87	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2,4-Trimethylbenzene	69	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Naphthalene	ND	2.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1-Methylnaphthalene	14	4.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
2-Methylnaphthalene	ND	4.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Acetone	ND	10		µg/L	1	6/8/2020 9:15:00 PM	R69472
Bromobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Bromodichloromethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Bromoform	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Bromomethane	ND	3.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
2-Butanone	ND	10		µg/L	1	6/8/2020 9:15:00 PM	R69472
Carbon disulfide	ND	10		µg/L	1	6/8/2020 9:15:00 PM	R69472
Carbon Tetrachloride	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Chlorobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Chloroethane	ND	2.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Chloroform	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Chloromethane	ND	3.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
2-Chlorotoluene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
4-Chlorotoluene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
cis-1,2-DCE	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Dibromochloromethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Dibromomethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,3-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,1-Dichloroethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,1-Dichloroethene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2-Dichloropropane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,3-Dichloropropane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
2,2-Dichloropropane	ND	2.0		µg/L	1	6/8/2020 9:15:00 PM	R69472

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #103
Project: GCU Com H 180
Collection Date: 6/3/2020 8:55:00 AM
Lab ID: 2006318-002 **Matrix:** AQUEOUS **Received Date:** 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Hexachlorobutadiene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
2-Hexanone	ND	10		µg/L	1	6/8/2020 9:15:00 PM	R69472
Isopropylbenzene	25	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
4-Isopropyltoluene	5.5	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
4-Methyl-2-pentanone	ND	10		µg/L	1	6/8/2020 9:15:00 PM	R69472
Methylene Chloride	ND	3.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
n-Butylbenzene	ND	3.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
n-Propylbenzene	19	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
sec-Butylbenzene	6.7	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Styrene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
tert-Butylbenzene	1.4	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
trans-1,2-DCE	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Trichlorofluoromethane	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
1,2,3-Trichloropropane	ND	2.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Vinyl chloride	ND	1.0		µg/L	1	6/8/2020 9:15:00 PM	R69472
Xylenes, Total	230	15		µg/L	10	6/10/2020 3:12:00 PM	R69529
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	6/8/2020 9:15:00 PM	R69472
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	6/8/2020 9:15:00 PM	R69472
Surr: Dibromofluoromethane	107	70-130		%Rec	1	6/8/2020 9:15:00 PM	R69472
Surr: Toluene-d8	130	70-130		%Rec	1	6/8/2020 9:15:00 PM	R69472

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 6/3/2020 10:00:00 AM
Lab ID: 2006318-003
Matrix: AQUEOUS
Received Date: 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	24	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Toluene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Ethylbenzene	4.8	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2,4-Trimethylbenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Naphthalene	ND	4.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1-Methylnaphthalene	8.1	8.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
2-Methylnaphthalene	ND	8.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Acetone	ND	20		µg/L	2	6/8/2020 10:02:00 PM	R69472
Bromobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Bromodichloromethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Bromoform	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Bromomethane	ND	6.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
2-Butanone	ND	20		µg/L	2	6/8/2020 10:02:00 PM	R69472
Carbon disulfide	ND	20		µg/L	2	6/8/2020 10:02:00 PM	R69472
Carbon Tetrachloride	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Chlorobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Chloroethane	ND	4.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Chloroform	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Chloromethane	ND	6.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
2-Chlorotoluene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
4-Chlorotoluene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
cis-1,2-DCE	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Dibromochloromethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Dibromomethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2-Dichlorobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,3-Dichlorobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,4-Dichlorobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Dichlorodifluoromethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,1-Dichloroethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,1-Dichloroethene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2-Dichloropropane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,3-Dichloropropane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
2,2-Dichloropropane	ND	4.0		µg/L	2	6/8/2020 10:02:00 PM	R69472

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #104
Project: GCU Com H 180
Collection Date: 6/3/2020 10:00:00 AM
Lab ID: 2006318-003
Matrix: AQUEOUS
Received Date: 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Hexachlorobutadiene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
2-Hexanone	ND	20		µg/L	2	6/8/2020 10:02:00 PM	R69472
Isopropylbenzene	13	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
4-Isopropyltoluene	3.3	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
4-Methyl-2-pentanone	ND	20		µg/L	2	6/8/2020 10:02:00 PM	R69472
Methylene Chloride	ND	6.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
n-Butylbenzene	ND	6.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
n-Propylbenzene	4.3	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
sec-Butylbenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Styrene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
tert-Butylbenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
trans-1,2-DCE	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,1,1-Trichloroethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,1,2-Trichloroethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Trichloroethene (TCE)	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Trichlorofluoromethane	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
1,2,3-Trichloropropane	ND	4.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Vinyl chloride	ND	2.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Xylenes, Total	78	3.0		µg/L	2	6/8/2020 10:02:00 PM	R69472
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	2	6/8/2020 10:02:00 PM	R69472
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	2	6/8/2020 10:02:00 PM	R69472
Surr: Dibromofluoromethane	102	70-130		%Rec	2	6/8/2020 10:02:00 PM	R69472
Surr: Toluene-d8	102	70-130		%Rec	2	6/8/2020 10:02:00 PM	R69472

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #105
Project: GCU Com H 180
Collection Date: 6/3/2020 8:15:00 AM
Lab ID: 2006318-004
Matrix: AQUEOUS
Received Date: 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Toluene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Ethylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Naphthalene	ND	2.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1-Methylnaphthalene	ND	4.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
2-Methylnaphthalene	ND	4.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Acetone	ND	10		µg/L	1	6/8/2020 10:25:00 PM	R69472
Bromobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Bromodichloromethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Bromoform	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Bromomethane	ND	3.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
2-Butanone	ND	10		µg/L	1	6/8/2020 10:25:00 PM	R69472
Carbon disulfide	ND	10		µg/L	1	6/8/2020 10:25:00 PM	R69472
Carbon Tetrachloride	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Chlorobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Chloroethane	ND	2.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Chloroform	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Chloromethane	ND	3.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
2-Chlorotoluene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
4-Chlorotoluene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
cis-1,2-DCE	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Dibromochloromethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Dibromomethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,3-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,1-Dichloroethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,1-Dichloroethene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2-Dichloropropane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,3-Dichloropropane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
2,2-Dichloropropane	ND	2.0		µg/L	1	6/8/2020 10:25:00 PM	R69472

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
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: MW #105
Project: GCU Com H 180
Collection Date: 6/3/2020 8:15:00 AM
Lab ID: 2006318-004 **Matrix:** AQUEOUS **Received Date:** 6/5/2020 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Hexachlorobutadiene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
2-Hexanone	ND	10		µg/L	1	6/8/2020 10:25:00 PM	R69472
Isopropylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
4-Isopropyltoluene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
4-Methyl-2-pentanone	ND	10		µg/L	1	6/8/2020 10:25:00 PM	R69472
Methylene Chloride	ND	3.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
n-Butylbenzene	ND	3.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
n-Propylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
sec-Butylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Styrene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
tert-Butylbenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
trans-1,2-DCE	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Trichlorofluoromethane	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
1,2,3-Trichloropropane	ND	2.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Vinyl chloride	ND	1.0		µg/L	1	6/8/2020 10:25:00 PM	R69472
Xylenes, Total	ND	1.5		µg/L	1	6/8/2020 10:25:00 PM	R69472
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	6/8/2020 10:25:00 PM	R69472
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	6/8/2020 10:25:00 PM	R69472
Surr: Dibromofluoromethane	101	70-130		%Rec	1	6/8/2020 10:25:00 PM	R69472
Surr: Toluene-d8	103	70-130		%Rec	1	6/8/2020 10:25:00 PM	R69472

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2006318**

15-Jun-20

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R69472**	RunNo: **69472**
Prep Date:	Analysis Date: **6/8/2020**	SeqNo: **2410465** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.0	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.6	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.5	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R69472**	RunNo: **69472**
Prep Date:	Analysis Date: **6/8/2020**	SeqNo: **2413309** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2006318**

15-Jun-20

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R69472**	RunNo: **69472**
Prep Date:	Analysis Date: **6/8/2020**	SeqNo: **2413309** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2006318**

15-Jun-20

Client: Blagg Engineering

Project: GCU Com H 180

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R69472**	RunNo: **69472**
Prep Date:	Analysis Date: **6/8/2020**	SeqNo: **2413309** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R69529**	RunNo: **69529**
Prep Date:	Analysis Date: **6/10/2020**	SeqNo: **2413576** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R69529**	RunNo: **69529**
Prep Date:	Analysis Date: **6/10/2020**	SeqNo: **2413577** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

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 Limit

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: **BLAGG** Work Order Number: **2006318** RcptNo: **1**

Received By: **Desiree Dominguez** **6/5/2020 8:30:00 AM** DD

Completed By: **Desiree Dominguez** **6/5/2020 10:52:41 AM** DD

Reviewed By: JR 6/5/20

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: DAD 6/5/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: BLAGG ENGR. / BPX ENERGY INC.

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

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

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: GCU Com H # 180

Project #:

Project Manager: Erin Dunman

Sampler: Nelson Velez

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.4 +0.0 = 1.4°c

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 2006318	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, SO_4)	pH	Total Dissolved Solids	8260B (VOA)	Dissolved Iron	Dissolved Lead	Dissolved Manganese	Grab sample	Air Bubbles (Y or N)
6/3/20	0925	WATER	MW # 102	40 ml VOA - 2	HCl & Cool	-001											√				√	
6/3/20	0855	WATER	MW # 103	40 ml VOA - 2	HCl & Cool	-002											√				√	
6/3/20	1000	WATER	MW # 104	40 ml VOA - 2	HCl & Cool	-003											√				√	
6/3/20	0815	WATER	MW # 105	40 ml VOA - 2	HCl & Cool	-004											√				√	

Analysis Request

Date	Time	Relinquished by:	Received by:	Date	Time
6/4/2020	1411		Christine Walters	6/4/2020	1411
6/4/2020	1813	Christine Walters		Courier 6/5/20	8:30

Remarks: **Bill directly to BPX using information below.**

CONTACT: **Erin Dunman**

PO #: **Already or to be provided.**

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