TETRA TECH

January 13, 2020

Rick Rickman
District Supervisor
Oil Conservation Division, District 1
1625 N. French Dr.
Hobbs, NM 88240

Re: Release Characterization and Remediation Work Plan
ConocoPhillips
VGEU 19-01 Flowline Release
Unit Letter L, Section 32, Township 17 South, Range 35 East
Lea County, New Mexico
1RP-5304

Dear Mr. Rickman:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a flow line release that occurred at the Vacuum Glorieta East Unit (VGEU) 19-01 well pad, within Unit Letter L, Section 32, Township 17 South, Range 35 East, in Lea County, New Mexico (Site). The release site coordinates are 32.7905655°, -103.4863052°. The Site location is shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico C-141 Initial Report (Appendix A), a release occurred from the VGEU 19-01 flowline on December 10, 2018. Approximately 45 barrels (bbls) of produced water were released and approximately 25 bbls of produced water were recovered. The release extent was predominantly confined to the lease pad.

SITE CHARACTERIZATION

A site characterization was performed and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances and the site is in a low karst potential area. One (1) water well is listed in Section 32 on the New Mexico Office of the State Engineer (NMOSE) database with groundwater documented at 85 feet below ground surface. The groundwater data is shown in Appendix B.

REGULATORY FRAMEWORK

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil.

Based upon the Site characterization, the proposed RRALs are:

- Benzene: 10 milligrams per kilogram (mg/kg);
- Total BTEX (sum of benzene, toluene, ethylbenzene, and xylene): 50 mg/kg;
- TPH (GRO + DRO + ORO): 2,500 mg/kg;
- TPH (GRO + DRO): 1,000 mg/kg;
- Chloride: 10,000 mg/kg (600 mg/kg in the top four feet)

INITIAL RESPONSE

In accordance with 19.15.29.8. B. (4) NMAC that states "the responsible party may commence remediation immediately after discovery of a release", ConocoPhillips elected to begin remediation of the impacted area in February 2019. The release was predominantly confined to the caliche well pad, as shown on Figure 3. The visually impacted soils within the release area footprint were scraped to a depth of 6 inches.

INITIAL SITE ASSESSMENT

Post-initial response, COP personnel delineated and sampled the release area in February 2019. Six (6) borings (SP-1 through SP-6) were installed using a hand auger to a total depth of 3 feet below ground surface to evaluate the vertical extents of the release. A total of 12 soil samples were collected from these 6 boring locations on February 28, 2019 (Figure 3). The samples were submitted to an analytical laboratory for Total Petroleum Hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX) and chloride (SM4500Cl-B) analysis. A copy of the analytical laboratory report and chain-of-custody documentation are included in Appendix D.

ADDITIONAL SITE ASSESSMENT

In order to more fully characterize and delineate the release area, Tetra Tech personnel conducted a subsurface investigation in September 2019. Nine (9) borings (BH-1 – BH-9) were installed using an air rotary drilling rig to various depths to evaluate the vertical and horizontal extents of the release. Selected samples were submitted to an analytical laboratory for TPH, BTEX, and chlorides (Method 300.0). Copies of the analytical laboratory reports and chain-of custody documentation are included in Appendix C. Boring logs, included as Appendix C, present soil descriptions, sample depths and field screening data from the additional site assessment.

SUMMARY OF SAMPLING RESULTS

The results of the assessment sampling event in February 2019 are summarized in Table 1. The sample locations are shown on Figure 3. The analytical results associated with boring locations SP-4, SP-5 and SP-6 were above the RRAL for chloride in the 0 ft. to 3 ft. depth intervals. Sample results from SP-1 were above the RRAL for chloride at the 0 ft. to 1 ft. depth interval. There was one RRAL exceedance for TPH at SP-4 (0-1'). There were no RRAL exceedances for BTEX in the initial assessment analytical results. Analytical results associated with boring locations SP-2 and SP-3 were below the RRALs for all constituents analyzed. Copies of analytical reports and chain-of-custody documentation are included in Appendix D.

The results of the additional assessment in September 2019 are summarized in Table 2. The sample locations are shown in Figure 3. All analytical results were below the proposed RRALs for both TPH and BTEX. The analytical results associated with boring locations BH-2 and BH-4 were above the RRAL for chloride in the 0 ft. – 1 ft. interval and the 0 ft. – 3 ft. intervals, respectfully. Chloride concentrations at boring locations BH-5, BH-6 and BH-7 are elevated in the 0 ft. – 3 ft. intervals and generally increase with depth. Further explanation on these results below. Analytical results associated with boring locations BH-1, BH-3 and BH-9 were below the RRALs for all constituents analyzed. Copies of analytical reports and chain-of-custody documentation are included in Appendix D.

Borings BH-4, BH-5, BH-6 and BH-7 were drilled in locations outside the 1RP-5304 release footprint to attempt to provide horizontal delineation. Based on the release extent, field screening data, and the subsequent analytical results, it appears the elevated chloride concentrations in the surface and subsurface at BH-4, BH-5, BH-6 and BH-7 are due to a historical release, and unrelated to the current release (1RP-5304). Cursory review of available satellite imagery indicates the general area has historically been used for production, however, imagery is not available prior to 1996.

REMEDIATION WORK PLAN

Based on the analytical results, ConocoPhillips proposes to remove the impacted material as depicted in Figure 4. Impacted soils (intervals shaded in Table 1 and 2) will be excavated until a representative sample from the walls and bottom of the excavation is below the RRAL. Excavations will be performed using heavy equipment (backhoes, hoe rams, and track hoes) to a maximum depth of 4 feet below surface within the release area. The area of the release extent that runs along the pressurized line near the 1RP-5304 release location will be hand-dug to a depth to 4' or the maximum extent practicable. Photographic documentation of the Site release area is included as Appendix E.

The impacted soil in the vicinity of boring locations BH-4, BH-5, BH-6 and BH-7 (assumed to be related to a historical release) will be excavated to a depth of 4 ft. and will be extended laterally (west) to the edge of the well pad and no more than 3 ft. from any pressurized lines. Additionally, excavations in the area containing BH-4 will extend laterally to the northeast until an acceptable sidewall sample is collected or the excavation reaches the lease road to the east.

Excavated soils will be transported offsite and disposed of at an NMOCD-approved or permitted facility. Confirmation floor and sidewall samples will be collected for verification of remedial activities, and analyzed for TPH, BTEX and chloride. Once the sample results are received, NMOCD will be notified and the excavation will then be backfilled with clean material to surface grade. The estimated volume of material to be remediated is 1,100 cubic yards.

VARIANCE REQUEST

In accordance with 19.15.29.14(A) NMAC, ConocoPhillips requests a variance for the remediation of the historical release area should excavation floor concentrations exceed 10,000 mg/kg. A 20-mil reinforced polyethylene liner will be installed and properly seated at a depth of 4 ft. within the excavated areas associated with the historical impacts. The liner will provide an engineered barrier that will inhibit the downward migration of residual constituents to groundwater.

ALTERNATIVE CONFIRMATION SAMPLING PLAN

In accordance with 19.15.29.12(D)(1)(b) NMAC, ConocoPhillips proposes the following alternative confirmation sampling plan to adhere with NMOCD requirements. The proposed confirmation sample locations are depicted in Figure 5. Twelve (14) confirmation floor samples and twenty-six (27) confirmation sidewall samples are proposed for verification of remedial activities. The proposed excavation encompasses an area of approximately 5,800 square feet.

These confirmation sidewall and floor samples will be representative of no more than approximately 500 square feet of excavated area. Confirmation samples will be sent to Pace Laboratories for analysis of TPH (Method 8015 modified), BTEX (Method 8260B), and chlorides (USEPA Method 300.0).

CONCLUSION

ConocoPhillips proposes to complete remediation activities at the Site within 90 days of the date of NMOCD approval of this submittal. Upon completion of the proposed work, a final closure report detailing the remediation activities and the results of the confirmation sampling will be submitted to NMOCD. If you have any questions concerning the soil assessment or the proposed remediation activities for the Site, please call me at (512) 338-2861 or Greg at (432) 682-4559.

Sincerely,
Tetra Tech, Inc.

Christian M. Llull, P.G.
Project Manager

Greg W. Pope, P.G.
Program Manager

cc:
Ms. Jenni Fortunato, RMR – ConocoPhillips
Mr. Gustavo Fejervary-Morena, GPBU - ConocoPhillips

List of Attachments

Figures:

- Figure 1 – Site Overview Map
- Figure 2 – Site Topographic Map
- Figure 3 – Release Assessment Map
- Figure 4 – Proposed Remediation Areas
- Figure 5 – Alternative Confirmation Sample Plan

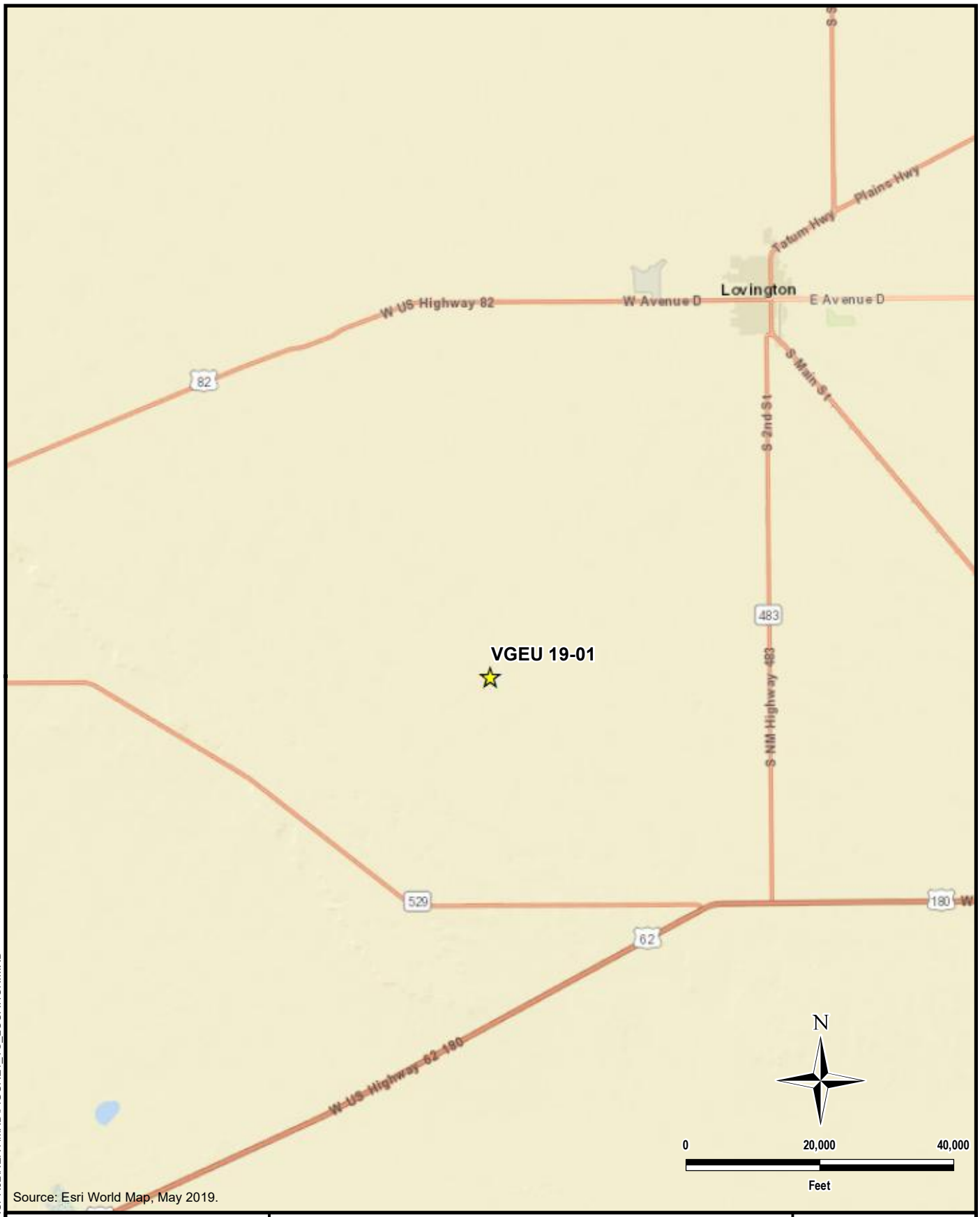
Tables:

- Table 1 – Summary of Analytical Results – Initial Soil Assessment
- Table 2 – Summary of Analytical Results – Additional Soil Assessment

Appendices:

- Appendix A – C-141 Forms
- Appendix B – NMOSE Groundwater Data/Karst Potential Map
- Appendix C – Boring Logs
- Appendix D – Laboratory Analytical Reports
- Appendix E – Photographic Documentation

FIGURES



Source: Esri World Map, May 2019.

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CONOCOPHILLIPS

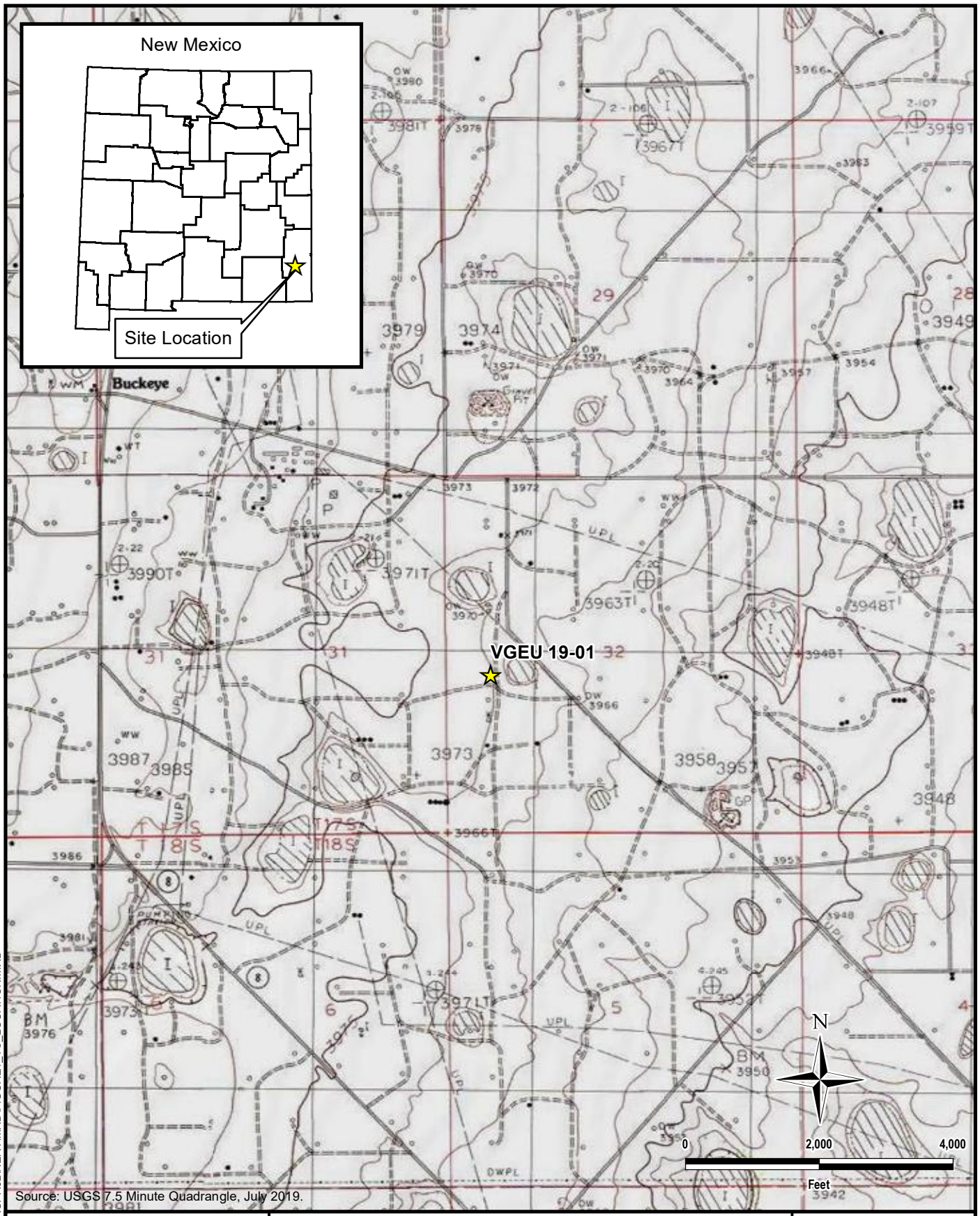
(32.79053° , -103.48632°)
LEA COUNTY, NEW MEXICO

VGEU 19-01 FLOWLINE RELEASE
OVERVIEW MAP

PROJECT NO.:	212C-MD-01852
DATE:	DECEMBER 13, 2019
DESIGNED BY:	AAM

Figure No.
1

\\TTS134FS1\SUP-GIS\ARCPRJ2\NERT\MXD\FIGURE1_TS_LOCATION.MXD



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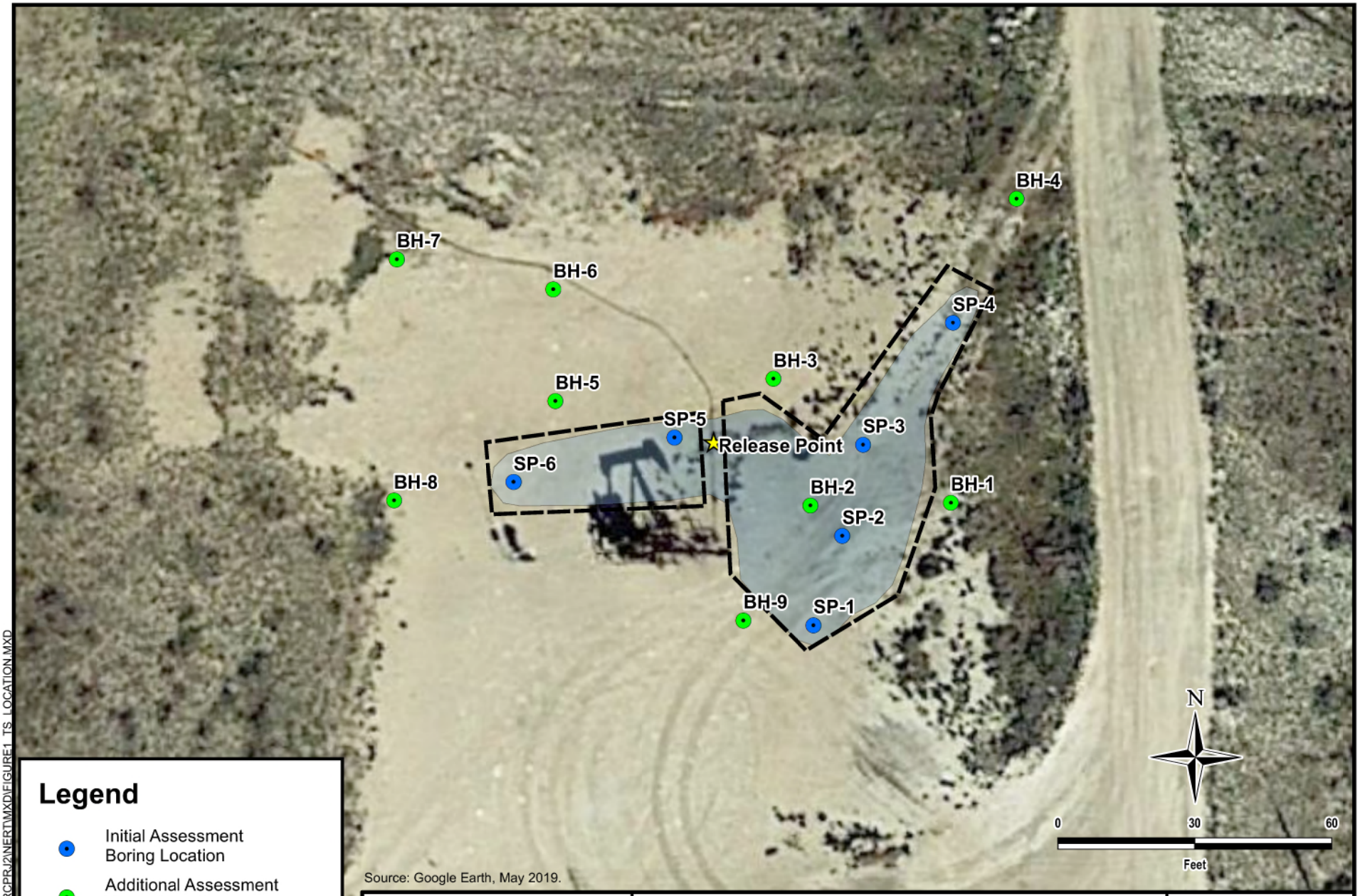
VGEU 19-01 FLOWLINE RELEASE
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-01852
DATE:	DECEMBER 13, 2019
DESIGNED BY:	AAM

Figure No.
2



Source: Google Earth, May 2019.

Legend

- Initial Assessment Boring Location
- Additional Assessment Boring Location
- Approximate Release Extent
- Initial Response (Extent of 6" Scrape)

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VGEU 19-01 FLOWLINE RELEASE
RELEASE ASSESSMENT MAP

PROJECT NO.:	212C-MD-01840
DATE:	NOVEMBER 22, 2019
DESIGNED BY:	AAM

Figure No.
3

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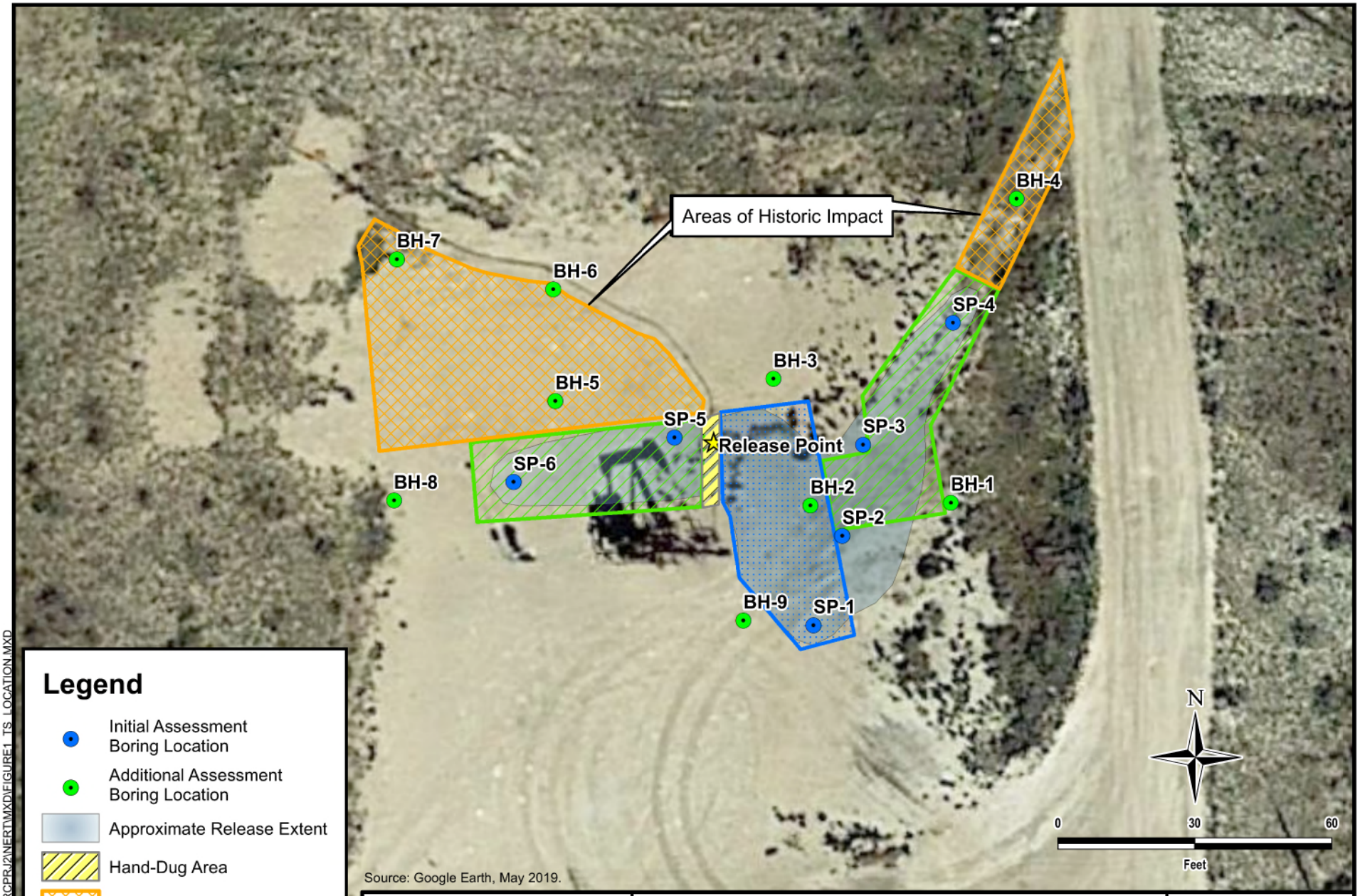

Legend

- Initial Assessment Boring Location
- Additional Assessment Boring Location
- Approximate Release Extent
- Hand-Dug Area
- 4' Excavation with Liner
- 4' Excavation
- 2' Excavation

\\TTS134FS1\SUP-GIS\ARCPRJ\2\NERT\MXD\FIGURE1_TS_LOCATION.MXD

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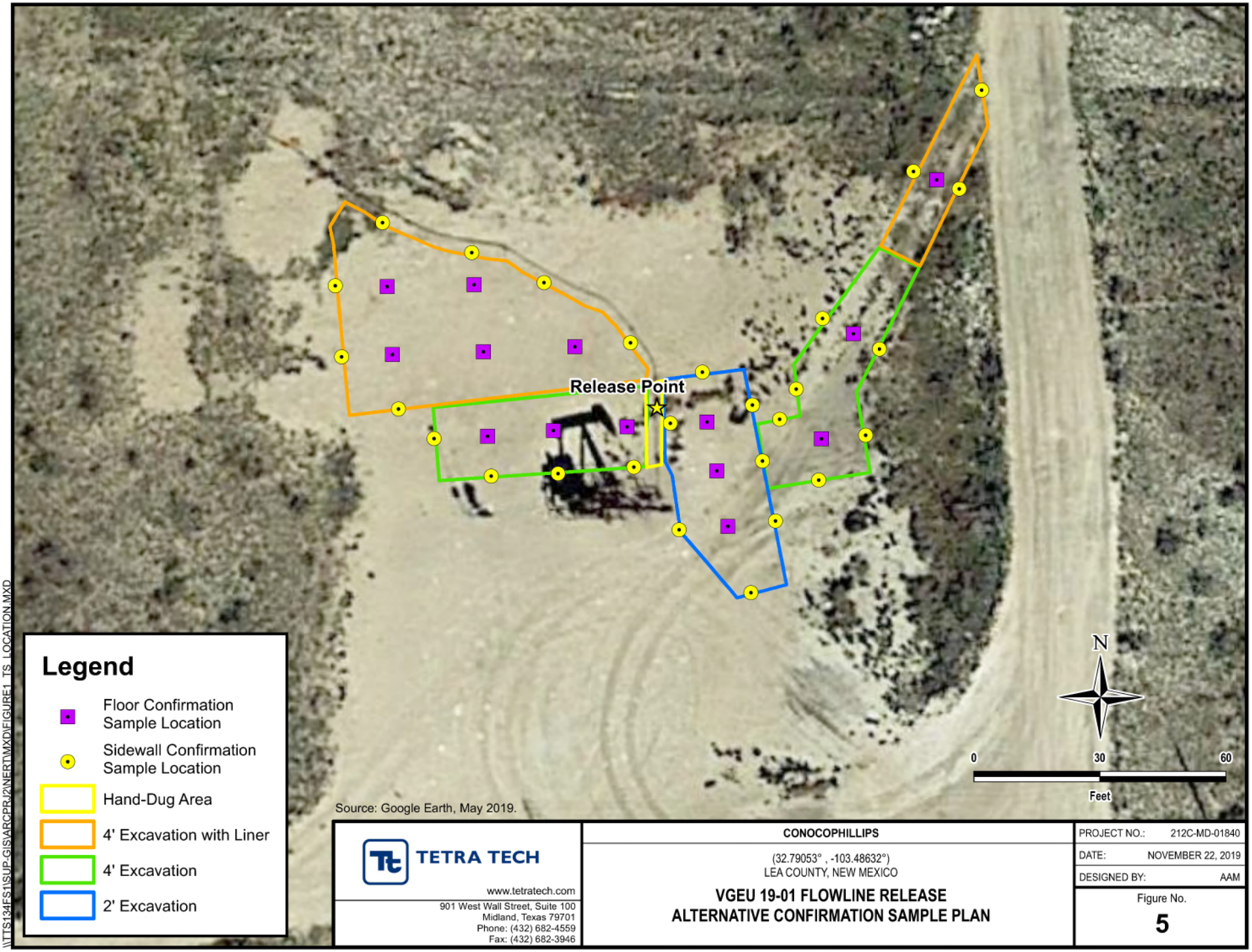
VGEU 19-01 FLOWLINE RELEASE
PROPOSED REMEDIATION AREAS

PROJECT NO.:	212C-MD-01840
DATE:	NOVEMBER 22, 2019
DESIGNED BY:	AAM

Figure No.
4



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VGEU 19-01 FLOWLINE RELEASE
ALTERNATIVE CONFIRMATION SAMPLE PLAN

PROJECT NO.:	212C-MD-01840
DATE:	NOVEMBER 22, 2019
DESIGNED BY:	AAM

Figure No.
5

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
INITIAL SOIL ASSESSMENT
VGEU 19-01 FLOWLINE RELEASE
LEA COUNTY, NEW MEXICO
1RP-5304

Sample ID	Sample Date	Sample Interval	Chloride[1]	BTEX[2]										TPH[3]							
				Benzene		Toluene		Ethylbenzene		Xylene		Total BTEX		GRO		DRO		EXT DRO		Total TPH (C_6 - C_{36})	
														C_6 - C_{10}		>C_{10} - C_{28}		>C_{28} - C_{36}			
		ft. bgs	mg/kg	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	
SP-1	02/28/19	0-1	***3440***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
		2-3	48	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
SP-2	02/28/19	0-1	48	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
		2-3	64	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
SP-3	02/28/19	0-1	16	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
		2-3	160	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
SP-4	02/28/19	0-1	***8000***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		**1610**		217		***1827***	
		2-3	***2240***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		23.1		<0.10		23.1	
SP-5	02/28/19	0-1	***11500***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
		2-3	***6660***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
SP-6	02/28/19	0-1	***30000***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	
		2-3	***8130***	<0.050		<0.050		<0.050		<0.150		<0.300		<0.10		<0.10		<0.10		<0.10	

NOTES:

ft.	Feet
bgs	Below ground surface
mg/kg	Milligrams per kilogram
ppm	Parts per million
TPH	Total Petroleum Hydrocarbons
*	Field screening measurement
1	Method 300.0
2	Method 8260B
3	Method 8015M
DRO	Diesel Range Organics
GRO	Gasoline Range Organics
ORO	Oil Range Organics

Bold and italicized values exceed the proposed RRAL for the Site.

Shaded rows indicate depth intervals proposed for excavation and remediation.

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make accurate determination; spike is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.
U	Not detected at the Sample Detection Limit (SDL).

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
ADDITIONAL SOIL ASSESSMENT
VGEU 19-01 FLOWLINE RELEASE
LEA COUNTY, NEW MEXICO
1RP-5304

Sample ID	Sample Date	Sample Interval	Field Screening Results		Chloride[1]		BTEX[2]										TPH[3]							
			Chloride	PID			Benzene		Toluene		Ethylbenzene		Xylene		Total BTEX		GRO (C_3 - C_{10})[4]		DRO (C_{10} - C_{28})		ORO (C_{28} - C_{40})		TPH (C_3 - C_{40})	
		ft bgs	ppm		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	
BH-1	09/16/19	0-1	267	4.3	110		< 0.00105		< 0.00524		< 0.00262		< 0.00682		-		< 0.105		4.75		11.3		16.05	
		2-3	241	4.1	114		< 0.00107		< 0.00536		< 0.00268		< 0.00697		-		< 0.107		5.84		14.6		20.44	
		4-5	NM	2.9	359		< 0.00107		< 0.00534		< 0.00267		< 0.00694		-		< 0.107		3.85	J	7.35		11.2	
		6-7	NM	2.1	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
BH-2	09/16/19	0-1	***948***	3.8	***992***		< 0.00109		< 0.00545		< 0.00272		< 0.00708		-		< 0.109		14.1		19.2		33.3	
		2-3	213	3.2	326		< 0.00115		< 0.00574		< 0.00287		< 0.00747		-		< 0.116		3.31	J	9.44		12.75	
		4-5	382	6.7	74.8		< 0.00111		< 0.00556		< 0.00278		< 0.00723		-		< 0.111		5.56		8.99		14.55	
BH-3	09/16/19	0-1	NM	4.8	65.8		< 0.00107		< 0.00533		< 0.00267		< 0.00693		-		< 0.107		4.19	J	11.5		15.69	
		2-3	143	3.7	31.8	B	< 0.00106		< 0.00532		< 0.00266		< 0.00692		-		< 0.106		2.26	J	6.86		9.12	
		4-5	NM	3.6	251		< 0.00115		< 0.00576		< 0.00288		< 0.00749		-		0.0275	B J	< 4.61		1.29	J	1.3175	
BH-4	09/16/19	0-1	NM	2.1	***2880***		< 0.00106		< 0.00531		< 0.00265		< 0.00690		-		< 0.106	J3	6.51		16.8		23.31	
		2-3	***1600***	4.8	***1650***		< 0.00109		< 0.00543		< 0.00272		< 0.00706		-		< 0.109		4.97		11.5		16.47	
		4-5	113	4.9	70.4		< 0.00106		< 0.00531		< 0.00266		< 0.00691		-		0.0233	B J	< 4.25		2.20	J	2.2233	
BH-5	09/16/19	0-1	NM	3.8	***3250***		< 0.00108		< 0.00540		< 0.00270		< 0.00702		-		< 0.108		12.3		36.4		48.7	
		2-3	***2420***	3.4	***1350***		< 0.00112		< 0.00562		< 0.00281		< 0.00730		-		< 0.112		14.8		58.6		73.4	
		4-5	1290	3.1	1060		< 0.00104		< 0.00522		< 0.00261		< 0.00679		-		< 0.104		< 4.18		< 4.18		-	
		6-7	1970	1.2	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
		9-10	2990	1.1	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
		14-15	2620	1.6	3020		< 0.00108	T8	0.00531	J T8	0.00135	J T8	< 0.00704	T8	0.00666		< 0.108	T8	< 4.33	T8	< 4.33	T8	-	
		19-20	1200	1.2	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
		24-25	554	1.1	260		< 0.00104	T8	0.00537	T8	< 0.00259	T8	< 0.00673	T8	0.00537		< 0.104	T8	< 4.14	T8	< 4.14	T8	-	
		29-30	176	1.2	138		< 0.00104	T8	0.00478	J T8	< 0.00261	T8	< 0.00679	T8	0.00478		< 0.104	T8	< 4.18	T8	< 4.18	T8	-	

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
ADDITIONAL SOIL ASSESSMENT
VGEU 19-01 FLOWLINE RELEASE
LEA COUNTY, NEW MEXICO
1RP-5304

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							Benzene		Toluene		Ethylbenzene		Xylene		Total BTEX		GRO (C_3 - C_{10})[4]		DRO (C_{10} - C_{28})		ORO (C_{28} - C_{40})		TPH (C_3 - C_{40})	
		ft bgs	Chloride	PID																				
			ppm		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	
BH-6	09/16/19	0-1	NM	2.7	***4510***		< 0.00105		< 0.00524		< 0.00262		< 0.00681		-		< 0.105		9.08		30.8		39.88	
		2-3	***4210***	5.7	***3370***		< 0.00105		< 0.00524		< 0.00262		< 0.00681		-		< 0.105		10.9		37.1		48	
		4-5	NM	4.3	2210		< 0.00105		< 0.00526		< 0.00263		< 0.00684		-		< 0.105		< 4.21		< 4.21		-	
		6-7	NM	3.1	6500		< 0.00106	T8	0.00498	J T8	< 0.00265	T8	< 0.00689	T8	0.00498		< 0.106	T8	< 4.24	T8	< 4.24	T8	-	
		9-10	5420	3.4	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
BH-7	09/16/19	0-1	NM	3.9	***2400***		< 0.00107		< 0.00536		< 0.00268		< 0.00697		-		< 0.107		9.70		44.4		54.1	
		2-3	***3010***	4.4	***1470***		< 0.00108		< 0.00538		< 0.00269		< 0.00699		-		< 0.108		14.4		62.3		76.7	
		4-5	NM	3.5	3340		< 0.00111		< 0.00556		< 0.00278		< 0.00723		-		< 0.111		7.39		23.5		30.89	
		6-7	NM	3.1	3760		< 0.00110	T8	0.00545	J T8	< 0.00275	T8	< 0.00716	T8	0.00545		< 0.110	T8	< 4.40	T8	< 4.40	T8	-	
		9-10	2990	5.8	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
BH-8	09/16/19	0-1	NM	4.8	44.0		< 0.00103		< 0.00515		< 0.00258		< 0.00670		-		< 0.103		< 4.12		7.08		7.08	
		2-3	331	6.5	158		< 0.00105		< 0.00527		< 0.00263		< 0.00684		-		< 0.105		2.92	J	8.76		11.68	
		4-5	102	6.3	14.6	B	< 0.00110		< 0.00550		< 0.00275		< 0.00715		-		< 0.110		< 4.40		< 4.40		-	
		6-7	NM	5.5	NS		NS		NS		NS		NS		-		NS		NS		NS		-	
BH-9	09/16/19	0-1	310	2.9	104		< 0.00102		< 0.00510		< 0.00255		< 0.00663		-		< 0.103		2.90	J	13.2		16.1	
		2-3	589	2.8	184		< 0.00101		< 0.00504		< 0.00252		< 0.00656		-		< 0.101		5.12		29.4		34.52	
		4-5	572	2.4	750		< 0.00106		< 0.00531		< 0.00266		< 0.00690		-		< 0.107		< 4.25		0.649	J	0.649	
		6-7	271	2.1	251		< 0.00102	T8	0.00532	T8	< 0.00256	T8	< 0.00665	T8	0.00532		< 0.102	T8	< 4.09	T8	< 4.09	T8	-	

NOTES:

ft	Feet
bgs	Below ground surface
ppm	Parts per million
mg/kg	Milligrams per kilogram
NM	Not measured
NS	Not sampled
TPH	Total Petroleum Hydrocarbons
GRO	Gasoline range organics
DRO	Diesel range organics
ORO	Oil range organics

Bold and italicized values indicate exceedance of proposed RRALs for the SIte.

Shaded rows indicate depth intervals proposed for excavation and remediation.

1	Method 300.0
2	Method 8260B
3	Method 8015
4	Method 8015D/GRO
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
T8	Sample(s) received past/too close to holding time expiration

APPENDIX A
C-141 Forms

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NCH1903240708
District RP	1RP-5304
Facility ID	
Application ID	pCH1903241056

Release Notification

Responsible Party

Responsible Party ConocoPhillips	OGRID 217817
Contact Name Justin Wright	Contact Telephone +1-575-631-9092
Contact email Justin.Wright@conocophillips.com	Incident NCH1903240708 VGEU 19-01 @ 30-025-20846
Contact mailing address 29 Vacuum Complex Lane, Lovington	

Location of Release Source

Latitude 32.7905655 Longitude -103.4863052

(NAD 83 in decimal degrees to 5 decimal places)

Site Name VGEU 19-01	Site Type Producing Well
Date Release Discovered 12-10-2018	API# *(if applicable)* 30-025-20846

Unit Letter	Section	Township	Range	County
L	32	17S	35E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 45	Volume Recovered (bbls) 25
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release - – December 10, 2018 at 1500. A flowline leak resulted in a 45 BBL release. 25 BPW were recovered. Site will be remediated per NMOCD guidelines.

State of New Mexico
Oil Conservation Division

Incident ID	NCH1903240708
District RP	1RP-5304
Facility ID	
Application ID	pCH1903241056

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Release greater than 25 BBL
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Email – Olivia Yu and Christina Hernandez	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Cullen Rosine Title: HSE Specialist

Signature: Cullen Rosine Date: 12-13-2018

email: Cullen.j.rosine@conocophillips.com Telephone: 973-727-4779

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NCH1903240708
District RP	1RP-5304
Facility ID	
Application ID	pCH1903241056

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	85 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	NCH1903240708
District RP	1RP-5304
Facility ID	
Application ID	pCH1903241056

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jenni Fortunato Title: Program Manager, RM&R

Signature: Date: 1.13.20

email: Jenni.Fortunato@cop.com Telephone: 832-486-2477

OCD Only

Received by: Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NCH1903240708
District RP	1RP-5304
Facility ID	
Application ID	pCH1903241056

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

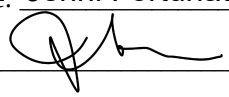
☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jenni Fortunato Title: Program Manager, Risk Management & Remediation

Signature:  Date: 1.13.20

email: Jenni.Fortunato@cop.com Telephone: 832-486-2477

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

APPENDIX B
NMOSE Groundwater Data

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04829 S		L	LE	3	4		32	17S	35E	642554	3628586*	198	85	113

Average Depth to Water: **85 feet**

Minimum Depth: **85 feet**

Maximum Depth: **85 feet**

Record Count: 1

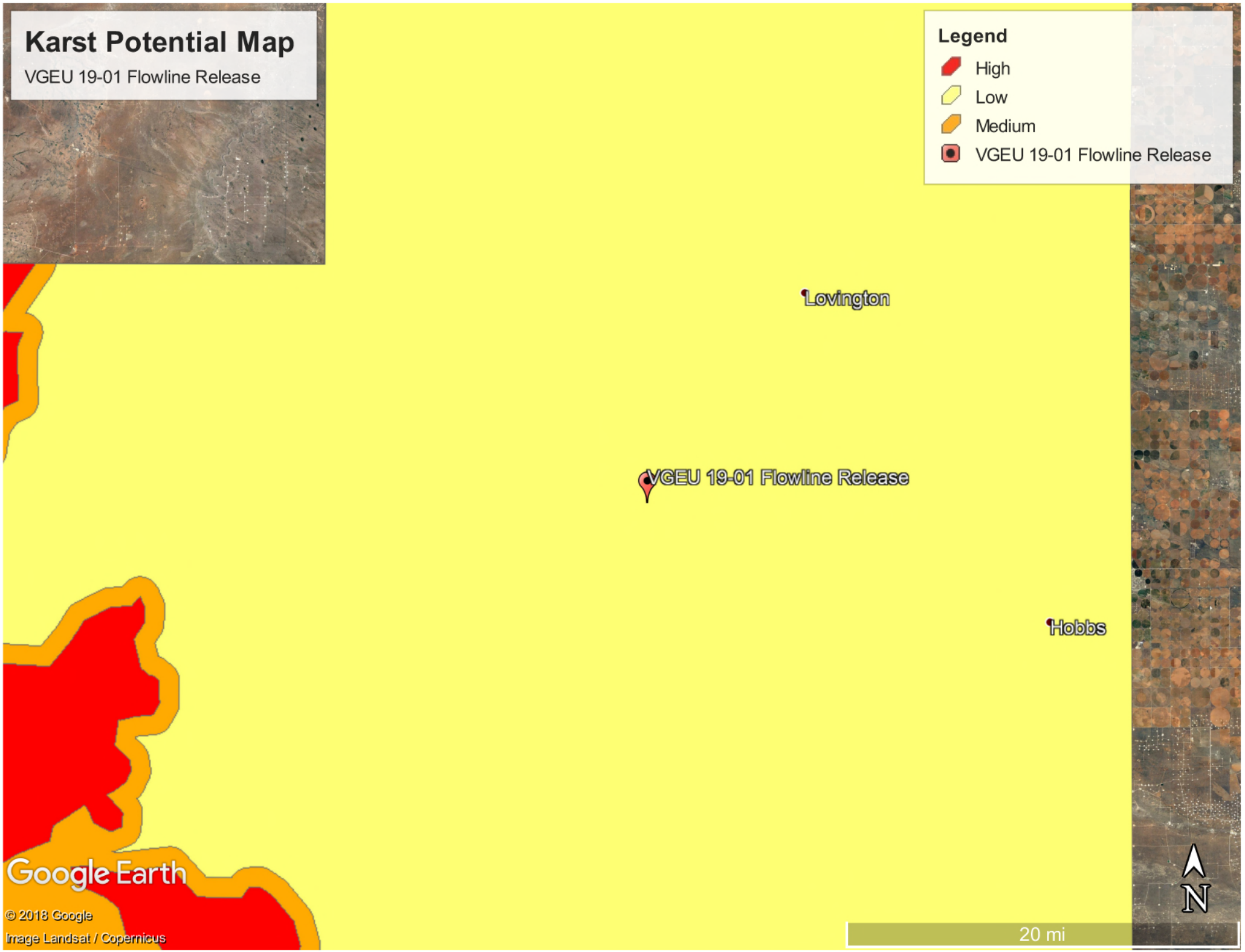
PLSS Search:

Section(s): 32 **Township:** 17S **Range:** 35E

***UTM location was derived from PLSS - see Help**

8/12/19 6:30 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER


Karst Potential Map
VGEU 19-01 Flowline Release
Legend
High
Low
Medium
VGEU 19-01 Flowline Release
Lovington
VGEU 19-01 Flowline Release
Hobbs
Google Earth
© 2018 Google
Image Landsat / Copernicus
N
20 mi

APPENDIX C
Boring Logs

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-1**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790561° E -103.486160° | Surface Elevation: 3969 ft

Borehole Number: BH-1 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
			267	4.3								**-ML-** SILT; Brown, medium dense to dense, with no hydrocarbon odor, with no staining.		BH-1 (0'-1')
			241	4.1										BH-1 (2'-3')
													3.5	
5				2.9								**-SM-** SILTY SAND; White, loose to medium dense, cemented with heavy gravel, with no hydrocarbon odor, with no staining.		BH-1 (4'-5')
				2.1									7	BH-1 (6'-7')

Bottom of borehole at 7.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-2**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790560° E -103.486260° | Surface Elevation: 3970 ft

Borehole Number: BH-2 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
			948	3.8								**-ML-** SILT; Brown, medium dense to dense, with no hydrocarbon odor, with no staining.		BH-2 (0'-1')
													1.5	
			213	3.2								**-CL-** SILTY CLAY; Brown, medium stiff, with no hydrocarbon odor, with no staining.		BH-2 (2'-3')
5			382	6.7									5	BH-2 (4'-5')

Bottom of borehole at 5.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-3**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790636° E -103.486285° | Surface Elevation: 3969 ft

Borehole Number: BH-3 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				4.8								**-ML-** SILT; Brown, medium dense, with few gravel, with low hydrocarbon odor, with no staining.	1.5	BH-3 (0'-1')
			143	3.7								**-SM-** SILTY SAND; White, loose, with heavy gravel, with no hydrocarbon odor, with no staining.		BH-3 (2'-3')
5				3.6									5	BH-3 (4'-5')

Bottom of borehole at 5.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-4**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790744° E -103.486111° | Surface Elevation: 3970 ft

Borehole Number: BH-4 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				2.1								**-ML-** SILT; Brown, loose to medium dense, with few gravel, with no hydrocarbon odor, with no staining.		BH-4 (0'-1')
			1620	4.8										BH-4 (2'-3')
													3.5	
5			113	4.9								**-SM-** SILTY SAND; White, loose, with heavy gravel , with no hydrocarbon odor, with no staining.	5	BH-4 (4'-5')

Bottom of borehole at 5.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-5**	Page 1 of 2

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790624° E -103.486441° | Surface Elevation: 3971 ft

Borehole Number: BH-5 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				3.8								**-ML-** SILT; Brown, dense, with low hydrocarbon odor, with little staining.	1.5	BH-5 (0'-1')
			2420	3.4								**-ML-** SILT; Brown, medium dense to dense, with few gravel, with no hydrocarbon odor, with no staining.	3.5	BH-5 (2'-3')
5			1290	3.1								**-SM-** SILTY SAND; White, loose, with heavy gravel, with no hydrocarbon odor, with no staining.	5.5	BH-5 (4'-5')
			1970	1.2								**-SM-** SILTY SAND; White to tan, loose to medium dense, cemented with gravel mix, with no hydrocarbon odor, with no staining.		BH-5 (6'-7')
10			2990	1.1										BH-5 (9'-10')
15			2620	1.6										BH-5 (14'-15')
20			1200	1.2										BH-5 (19'-20')
25			554	1.1										BH-5 (24'-25')

Sampler Types: Split Spoon, Shelby, Bulk Sample, Grab Sample, Acetate Liner, Vane Shear, California, Test Pit

Operation Types: Mud Rotary, Continuous Flight Auger, Wash Rotary, Auger, Air Rotary, Core Barrel, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-5**	Page 2 of 2

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790624° E -103.486441° | Surface Elevation: 3971 ft

Borehole Number: BH-5 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
30			176	1.2									30	BH-5 (29'-30')

Bottom of borehole at 30.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-6**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790691° E -103.486442° | Surface Elevation: 3971 ft

Borehole Number: BH-6 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				2.7								**-ML-** SILT; Brown, medium dense to dense, with few gravel, with low hydrocarbon odor, with little staining.		BH-6 (0'-1')
			4210	5.7										BH-6 (2'-3')
													3.5	
5				4.3								**-SM-** SILTY SAND; White, loose, cemented with heavy gravel, with low hydrocarbon odor, with little staining.		BH-6 (4'-5')
				3.1										BH-6 (6'-7')
10			5420	3.4									10	BH-6 (9'-10')

Bottom of borehole at 10.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-7**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790710° E -103.486554° | Surface Elevation: 3971 ft

Borehole Number: BH-7 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				3.9								**-ML-** SILT; Brown, medium dense, with low hydrocarbon odor, with little staining.	1.5	BH-7 (0'-1')
			3010	4.4								**-CL-** SANDY CLAY; Brown, medium stiff, with no hydrocarbon odor, with no staining.		BH-7 (2'-3')
5				3.5										BH-7 (4'-5')
				3.1								**-SM-** SILTY SAND; White, loose, with gravel, with no hydrocarbon odor, with no staining.	5.5	BH-7 (6'-7')
10			2990	5.8									10	BH-7 (9'-10')

Bottom of borehole at 10.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-8**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790565° E -103.486557° | Surface Elevation: 3972 ft

Borehole Number: BH-8 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
				4.8								**-ML-** SILT; Brown, loose to medium dense, with gravel, with low hydrocarbon odor, with no staining.		BH-8 (0'-1')
			331	6.5										BH-8 (2'-3')
													3.5	
5			102	6.3								**-SM-** SILTY SAND; White, loose, with gravel, with no hydrocarbon odor, with no staining.		BH-8 (4'-5')
				5.5									7	BH-8 (6'-7')

Bottom of borehole at 7.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

212C-MD-01840	TETRA TECH	**LOG OF BORING BH-9**	Page 1 of 1

Project Name: VGEU 19-01 Flowline Release

Borehole Location: GPS: N 32.790491° E -103.486308° | Surface Elevation: 3970 ft

Borehole Number: BH-9 | Borehole Diameter (in.): 8 | Date Started: 9/16/2019 | Date Finished: 9/16/2019

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY ft Upon Completion of Drilling ▼ DRY ft

Remarks:

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm) ExStik	VOC FIELD SCREENING (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
			310	2.9								**-SM-** SILTY SAND; White, loose, with gravel, with no hydrocarbon odor, with no staining.		BH-9 (0'-1')
			589	2.8										BH-9 (2'-3')
5			572	2.4										BH-9 (4'-5')
			271	2.1									7	BH-9 (6'-7')

Bottom of borehole at 7.0 feet.

Sampler Types: Split Spoon, Acetate Liner, Shelby, Vane Shear, Bulk Sample, California, Grab Sample, Test Pit

Operation Types: Auger, Mud Rotary, Air Rotary, Continuous Flight Auger, Core Barrel, Wash Rotary, Direct Push

Notes:

Analytical samples are shown in the "Remarks" column.
Surface elevation is an estimated value.

Logger: Joe Tyler | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

APPENDIX D
Laboratory Analytical Reports

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 06, 2019

JUSTIN WRIGHT

Conoco Phillips - Hobbs

P. O. BOX 325

Hobbs, NM 88240

RE: VGEU 19-01

Enclosed are the results of analyses for samples received by the laboratory on 03/01/19 11:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 1 - 1' (H900821-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/05/2019	ND	1.92	95.9	2.00	1.39	
Toluene*	<0.050	0.050	03/05/2019	ND	2.03	101	2.00	2.11	
Ethylbenzene*	<0.050	0.050	03/05/2019	ND	1.95	97.7	2.00	4.32	
Total Xylenes*	<0.150	0.150	03/05/2019	ND	5.65	94.2	6.00	4.59	
Total BTEX	<0.300	0.300	03/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3440**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	230	115	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	217	109	200	6.25	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *91.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *93.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 1 - 3' (H900821-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/05/2019	ND	1.92	95.9	2.00	1.39	
Toluene*	<0.050	0.050	03/05/2019	ND	2.03	101	2.00	2.11	
Ethylbenzene*	<0.050	0.050	03/05/2019	ND	1.95	97.7	2.00	4.32	
Total Xylenes*	<0.150	0.150	03/05/2019	ND	5.65	94.2	6.00	4.59	
Total BTEX	<0.300	0.300	03/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.3 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	230	115	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	217	109	200	6.25	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *89.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *92.5 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 2 - 1' (H900821-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	230	115	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	217	109	200	6.25	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *90.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *91.7 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 2 - 3' (H900821-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *92.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.4 %* *37.6-147*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 3 - 1' (H900821-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *89.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.0 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 3 - 3' (H900821-06)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *93.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.8 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 4 - 1' (H900821-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8000**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	**1610**	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	**217**	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *93.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *148 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 4 - 3' (H900821-08)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2240**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	**23.1**	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *86.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *88.6 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 5 - 1' (H900821-09)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**11500**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *90.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *90.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 5 - 3' (H900821-10)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6660**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *94.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.4 %* *37.6-147*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 6 - 1' (H900821-11)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *100 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**30000**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *87.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *85.7 %* *37.6-147*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Conoco Phillips - Hobbs
JUSTIN WRIGHT
P. O. BOX 325
Hobbs NM, 88240
Fax To: (575) 297-1477

Received:	03/01/2019	Sampling Date:	02/28/2019
Reported:	03/06/2019	Sampling Type:	Soil
Project Name:	VGEU 19-01	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LEA CO NM		

Sample ID: SP 6 - 3' (H900821-12)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/04/2019	ND	1.89	94.4	2.00	11.6	
Toluene*	<0.050	0.050	03/04/2019	ND	1.95	97.6	2.00	12.8	
Ethylbenzene*	<0.050	0.050	03/04/2019	ND	1.85	92.5	2.00	13.7	
Total Xylenes*	<0.150	0.150	03/04/2019	ND	5.39	89.8	6.00	13.7	
Total BTEX	<0.300	0.300	03/04/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8130**	16.0	03/06/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/04/2019	ND	209	104	200	0.367	
DRO >C10-C28*	<10.0	10.0	03/04/2019	ND	216	108	200	1.12	
EXT DRO >C28-C36	<10.0	10.0	03/04/2019	ND					

Surrogate: 1-Chlorooctane *88.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.8 %* *37.6-147*

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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(575) 393-2326 Fax (575) 393-2476

Page____ of____

Company Name:	ConocoPhillips
Project Manager:	Justin Wright
Address:	
City:	Hobbs
State:	NM
Zip:	
Phone #:	575-631-9098
Fax #:	
Project #:	
Project Owner:	COPC
Project Name:	VGEU 19-01
Project Location:	Lea County, NM
Sampler Name:	Justin Wright

BILL TO

P.O. #:	
Company:	COPC
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides	BTEX	TPH
H900821																	
1	SP1-1'	G				✓					✓		2-28	2:10	✓	✓	✓
2	SP1-3'	G				✓					✓		2-28	2:17	✓	✓	✓
3	SP2-1'	G				✓					✓		2-28	2:21	✓	✓	✓
4	SP2-3'	G				✓					✓		2-28	2:25	✓	✓	✓
5	SP3-1'	G				✓					✓		2-28	2:32	✓	✓	✓
6	SP3-3'	G				✓					✓		2-28	2:37	✓	✓	✓
7	SP4-1'	G				✓					✓		2-28	2:41	✓	✓	✓
8	SP4-3'	G											2-28	2:45	✓	✓	✓

Sampler Relinquished:	Date: 5-1-19	Received By: Jodi Henson	
Relinquished By:	Time: 11:20 AM	Received By:	
	Date:		
	Time:		

Phone Result: ☐ No Add'l Phone #:
Fax Result: ☐ No Add'l Fax #:
REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Temp. 1.8°C / #94

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials)

Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(575) 393-2326 Fax (575) 393-2476

Page____ of____

Company Name:	ConocoPhillips
Project Manager:	Justin Wright
Address:	
City:	Hobbs
State:	NM
Zip:	
Phone #:	575-631-9092
Fax #:	
Project #:	
Project Owner:	COPC
Project Name:	VGEU 19-01
Project Location:	Lea County, NM
Sampler Name:	Justin Wright

BILL TO

P.O. #:	
Company:	COPC
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides	BTEX	TPH
H40004																	
9	SP-5-1'	G				✓							2-28	2:50	✓	✓	✓
10	SP-5-3'	G				✓							2-28	2:56	✓	✓	✓
11	SP-6-1'	G				✓							2-28	2:59	✓	✓	✓
12	SP-6-3'	G				✓							2-28	3:04	✓	✓	✓

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 2-1-19	Received By: Jodi Henson	
Relinquished By:	Time: 11:30AM	Received By:	
	Date:		
	Time:		

Phone Result:	☐	No	Add'l Phone #:
Fax Result:	☐	No	Add'l Fax #:
REMARKS:			

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Temp. 1.8°C #97

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) JH

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 01, 2019

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1142081
Samples Received:	09/21/2019
Project Number:	212C-MS-01840
Description:	COP VGEU 19-01

Report To: Chrisian Llull
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

TABLE OF CONTENTS

Sc: Sample Chain of Custody

BH-1 (0-1') L1142081-01 Solid

Collected by | Collected date/time 09/16/19 10:00 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353379	1	09/27/19 13:48	09/27/19 14:01	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 10:06	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 18:03	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 10:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 00:46	KME	Mt. Juliet, TN

BH-1 (2-3') L1142081-02 Solid

Collected by | Collected date/time 09/16/19 10:05 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353379	1	09/27/19 13:48	09/27/19 14:01	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 10:24	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 18:24	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 11:09	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 01:24	KME	Mt. Juliet, TN

BH-1 (4-5') L1142081-03 Solid

Collected by | Collected date/time 09/16/19 10:10 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353379	1	09/27/19 13:48	09/27/19 14:01	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 10:34	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 18:44	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 12:53	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 01:37	KME	Mt. Juliet, TN

BH-2 (0-1') L1142081-04 Solid

Collected by | Collected date/time 09/16/19 10:30 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353379	1	09/27/19 13:48	09/27/19 14:01	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	5	09/24/19 08:30	09/24/19 10:43	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 19:05	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 13:14	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 11:55	09/29/19 01:49	KME	Mt. Juliet, TN

BH-2 (2-3') L1142081-05 Solid

Collected by | Collected date/time 09/16/19 10:35 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353379	1	09/27/19 13:48	09/27/19 14:01	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 10:53	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1.01	09/25/19 16:52	09/27/19 19:25	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 13:35	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 11:55	09/29/19 02:02	KME	Mt. Juliet, TN

BH-2 (4-5') L1142081-06 Solid

Collected by | Collected date/time 09/16/19 10:40 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353379	1	09/27/19 13:48	09/27/19 14:01	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 11:02	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 19:46	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 13:55	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 02:14	KME	Mt. Juliet, TN

BH-3 (0-1') L1142081-07 Solid

Collected by | Collected date/time 09/16/19 10:50 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 11:12	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 20:06	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 14:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 02:27	KME	Mt. Juliet, TN

BH-3 (2-3') L1142081-08 Solid

Collected by | Collected date/time 09/16/19 10:55 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 11:41	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 20:27	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 14:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 02:39	KME	Mt. Juliet, TN

BH-3 (4-5) L1142081-09 Solid

Collected by | Collected date/time 09/16/19 11:00 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 11:50	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354679	1	09/25/19 16:52	09/30/19 13:14	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 14:57	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 02:52	KME	Mt. Juliet, TN

BH-4 (0-1') L1142081-10 Solid

Collected by | Collected date/time 09/16/19 11:20 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	10	09/24/19 08:30	09/24/19 12:00	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 21:36	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 15:18	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 03:05	KME	Mt. Juliet, TN

BH-4 (2-3') L1142081-11 Solid

Collected by | Collected date/time 09/16/19 11:25 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	10	09/24/19 08:30	09/24/19 12:09	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/27/19 21:56	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 15:39	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 03:17	KME	Mt. Juliet, TN

BH-4 (4-5') L1142081-12 Solid

Collected by | Collected date/time 09/16/19 11:30 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	1	09/24/19 08:30	09/24/19 12:19	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354679	1	09/25/19 16:52	09/30/19 13:34	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 16:00	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 03:30	KME	Mt. Juliet, TN

BH-5 (0-1') L1142081-13 Solid

Collected by | Collected date/time 09/16/19 11:45 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	10	09/24/19 08:30	09/24/19 12:28	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354679	1	09/25/19 16:52	09/30/19 13:55	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 16:20	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 07:57	09/29/19 03:42	KME	Mt. Juliet, TN

BH-5 (2-3') L1142081-14 Solid

Collected by | Collected date/time 09/16/19 11:50 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	5	09/24/19 08:30	09/24/19 12:38	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354679	1	09/25/19 16:52	09/30/19 14:50	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 16:41	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 01:53	CLG	Mt. Juliet, TN

BH-5 (4-5) L1142081-15 Solid

Collected by | Collected date/time 09/16/19 11:55 | Received date/time 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	5	09/24/19 08:30	09/24/19 13:35	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/28/19 03:12	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 17:01	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/26/19 21:54	CLG	Mt. Juliet, TN

BH-6 (0-1') L1142081-16 Solid

Collected by | Collected date/time: 09/16/19 13:30 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353381	1	09/27/19 13:35	09/27/19 13:46	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	20	09/24/19 08:30	09/24/19 13:44	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/28/19 03:32	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352512	1	09/25/19 16:52	09/26/19 17:21	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 01:16	CLG	Mt. Juliet, TN

BH-6 (2-3') L1142081-17 Solid

Collected by | Collected date/time: 09/16/19 13:40 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	20	09/24/19 08:30	09/24/19 13:54	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/28/19 03:53	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1353482	1	09/25/19 16:52	09/28/19 11:35	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 01:28	CLG	Mt. Juliet, TN

BH-6 (4-5') L1142081-18 Solid

Collected by | Collected date/time: 09/16/19 13:50 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	10	09/24/19 08:30	09/24/19 14:03	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/28/19 08:45	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 21:04	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/26/19 22:07	CLG	Mt. Juliet, TN

BH-7 (0-1') L1142081-19 Solid

Collected by | Collected date/time: 09/16/19 14:30 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	10	09/24/19 08:30	09/24/19 14:13	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/28/19 09:06	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 21:25	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 02:06	CLG	Mt. Juliet, TN

BH-7 (2-3') L1142081-20 Solid

Collected by | Collected date/time: 09/16/19 14:35 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350262	5	09/24/19 08:30	09/24/19 14:32	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353634	1	09/25/19 16:52	09/28/19 09:26	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 21:45	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 02:19	CLG	Mt. Juliet, TN

BH-7 (4-5') L1142081-21 Solid

			Collected by	Collected date/time	Received date/time	
				09/16/19 14:40	09/21/19 08:30	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350445	10	09/23/19 17:40	09/24/19 00:14	LDC	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354028	1	09/25/19 16:52	09/27/19 21:55	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 22:05	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/26/19 23:47	CLG	Mt. Juliet, TN

BH-8 (0-1') L1142081-22 Solid

			Collected by	Collected date/time	Received date/time	
				09/16/19 15:00	09/21/19 08:30	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350445	1	09/23/19 17:40	09/24/19 00:23	LDC	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354028	1	09/25/19 16:52	09/27/19 22:16	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 22:26	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1353768	1	09/28/19 11:55	09/29/19 03:55	KME	Mt. Juliet, TN

BH-8 (2-3') L1142081-23 Solid

			Collected by	Collected date/time	Received date/time	
				09/16/19 15:10	09/21/19 08:30	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350445	1	09/23/19 17:40	09/24/19 00:33	LDC	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354028	1	09/25/19 16:52	09/27/19 22:36	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 22:46	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 00:38	CLG	Mt. Juliet, TN

BH-8 (4-5') L1142081-24 Solid

			Collected by	Collected date/time	Received date/time	
				09/16/19 15:20	09/21/19 08:30	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350714	1	09/24/19 17:30	09/24/19 19:52	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354028	1	09/25/19 16:52	09/27/19 22:57	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 23:07	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/26/19 23:35	CLG	Mt. Juliet, TN

BH-9 (0-1') L1142081-25 Solid

			Collected by	Collected date/time	Received date/time	
				09/16/19 15:45	09/21/19 08:30	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350714	1	09/24/19 17:30	09/24/19 20:10	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354028	1.01	09/25/19 16:52	09/27/19 23:17	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 23:27	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 01:03	CLG	Mt. Juliet, TN

BH-9 (2-3') L1142081-26 Solid

Collected by	Collected date/time	Received date/time
	09/16/19 15:50	09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353382	1	09/27/19 13:17	09/27/19 13:32	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350714	1	09/24/19 17:30	09/24/19 20:20	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1354028	1	09/25/19 16:52	09/27/19 23:38	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/26/19 23:47	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/27/19 01:41	CLG	Mt. Juliet, TN

BH-9 (4-5') L1142081-27 Solid

Collected by	Collected date/time	Received date/time
	09/16/19 15:55	09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1353383	1	09/30/19 07:49	09/30/19 07:58	KBC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1350714	1	09/24/19 17:30	09/24/19 20:29	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1353697	1.01	09/25/19 16:52	09/28/19 08:11	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1352625	1	09/25/19 16:52	09/27/19 00:08	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1352422	1	09/26/19 06:43	09/26/19 22:57	CLG	Mt. Juliet, TN

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

Chris McCord
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.3		1	09/27/2019 14:01	WG1353379

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	110		0.834	10.0	10.5	1	09/24/2019 10:06	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0228	0.100	0.105	1	09/27/2019 18:03	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*97.3*				*77.0-120*		*09/27/2019 18:03*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000420	0.00100	0.00105	1	09/26/2019 10:48	WG1352512
Toluene	U		0.00131	0.00500	0.00524	1	09/26/2019 10:48	WG1352512
Ethylbenzene	U		0.000556	0.00250	0.00262	1	09/26/2019 10:48	WG1352512
Total Xylenes	U		0.00501	0.00650	0.00682	1	09/26/2019 10:48	WG1352512
(S) Toluene-d8	*114*				*75.0-131*		*09/26/2019 10:48*	WG1352512
(S) 4-Bromofluorobenzene	*107*				*67.0-138*		*09/26/2019 10:48*	WG1352512
(S) 1,2-Dichloroethane-d4	*98.2*				*70.0-130*		*09/26/2019 10:48*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	4.75		1.69	4.00	4.20	1	09/29/2019 00:46	WG1353768
C28-C40 Oil Range	11.3		0.287	4.00	4.20	1	09/29/2019 00:46	WG1353768
(S) o-Terphenyl	*55.9*				*18.0-148*		*09/29/2019 00:46*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.3		1	09/27/2019 14:01	WG1353379

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	114		0.853	10.0	10.7	1	09/24/2019 10:24	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0233	0.100	0.107	1	09/27/2019 18:24	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.7*				*77.0-120*		*09/27/2019 18:24*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000429	0.00100	0.00107	1	09/26/2019 11:09	WG1352512
Toluene	U		0.00134	0.00500	0.00536	1	09/26/2019 11:09	WG1352512
Ethylbenzene	U		0.000568	0.00250	0.00268	1	09/26/2019 11:09	WG1352512
Total Xylenes	U		0.00512	0.00650	0.00697	1	09/26/2019 11:09	WG1352512
(S) Toluene-d8	*115*				*75.0-131*		*09/26/2019 11:09*	WG1352512
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*09/26/2019 11:09*	WG1352512
(S) 1,2-Dichloroethane-d4	*99.1*				*70.0-130*		*09/26/2019 11:09*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	5.84		1.73	4.00	4.29	1	09/29/2019 01:24	WG1353768
C28-C40 Oil Range	14.6		0.294	4.00	4.29	1	09/29/2019 01:24	WG1353768
(S) o-Terphenyl	*71.3*				*18.0-148*		*09/29/2019 01:24*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.7		1	09/27/2019 14:01	WG1353379

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	359		0.849	10.0	10.7	1	09/24/2019 10:34	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0232	0.100	0.107	1	09/27/2019 18:44	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*95.4*				*77.0-120*		*09/27/2019 18:44*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000427	0.00100	0.00107	1	09/26/2019 12:53	WG1352512
Toluene	U		0.00133	0.00500	0.00534	1	09/26/2019 12:53	WG1352512
Ethylbenzene	U		0.000566	0.00250	0.00267	1	09/26/2019 12:53	WG1352512
Total Xylenes	U		0.00510	0.00650	0.00694	1	09/26/2019 12:53	WG1352512
(S) Toluene-d8	*112*				*75.0-131*		*09/26/2019 12:53*	WG1352512
(S) 4-Bromofluorobenzene	*108*				*67.0-138*		*09/26/2019 12:53*	WG1352512
(S) 1,2-Dichloroethane-d4	*98.7*				*70.0-130*		*09/26/2019 12:53*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.85	J	1.72	4.00	4.27	1	09/29/2019 01:37	WG1353768
C28-C40 Oil Range	7.35		0.292	4.00	4.27	1	09/29/2019 01:37	WG1353768
(S) o-Terphenyl	*69.1*				*18.0-148*		*09/29/2019 01:37*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.8		1	09/27/2019 14:01	WG1353379

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	992		4.33	10.0	54.5	5	09/24/2019 10:43	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0236	0.100	0.109	1	09/27/2019 19:05	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.1*				*77.0-120*		*09/27/2019 19:05*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000436	0.00100	0.00109	1	09/26/2019 13:14	WG1352512
Toluene	U		0.00136	0.00500	0.00545	1	09/26/2019 13:14	WG1352512
Ethylbenzene	U		0.000578	0.00250	0.00272	1	09/26/2019 13:14	WG1352512
Total Xylenes	U		0.00521	0.00650	0.00708	1	09/26/2019 13:14	WG1352512
(S) Toluene-d8	*111*				*75.0-131*		*09/26/2019 13:14*	WG1352512
(S) 4-Bromofluorobenzene	*109*				*67.0-138*		*09/26/2019 13:14*	WG1352512
(S) 1,2-Dichloroethane-d4	*102*				*70.0-130*		*09/26/2019 13:14*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	14.1		1.75	4.00	4.36	1	09/29/2019 01:49	WG1353768
C28-C40 Oil Range	19.2		0.299	4.00	4.36	1	09/29/2019 01:49	WG1353768
(S) o-Terphenyl	*63.8*				*18.0-148*		*09/29/2019 01:49*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.1		1	09/27/2019 14:01	WG1353379

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	326		0.913	10.0	11.5	1	09/24/2019 10:53	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0252	0.100	0.116	1.01	09/27/2019 19:25	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.0*				*77.0-120*		*09/27/2019 19:25*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000459	0.00100	0.00115	1	09/26/2019 13:35	WG1352512
Toluene	U		0.00144	0.00500	0.00574	1	09/26/2019 13:35	WG1352512
Ethylbenzene	U		0.000609	0.00250	0.00287	1	09/26/2019 13:35	WG1352512
Total Xylenes	U		0.00549	0.00650	0.00747	1	09/26/2019 13:35	WG1352512
(S) Toluene-d8	*115*				*75.0-131*		*09/26/2019 13:35*	WG1352512
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*09/26/2019 13:35*	WG1352512
(S) 1,2-Dichloroethane-d4	*98.4*				*70.0-130*		*09/26/2019 13:35*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	3.31	J	1.85	4.00	4.59	1	09/29/2019 02:02	WG1353768
C28-C40 Oil Range	9.44		0.315	4.00	4.59	1	09/29/2019 02:02	WG1353768
(S) o-Terphenyl	*67.0*				*18.0-148*		*09/29/2019 02:02*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.9		1	09/27/2019 14:01	WG1353379

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	74.8		0.885	10.0	11.1	1	09/24/2019 11:02	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0241	0.100	0.111	1	09/27/2019 19:46	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*93.1*				*77.0-120*		*09/27/2019 19:46*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000445	0.00100	0.00111	1	09/26/2019 13:55	WG1352512
Toluene	U		0.00139	0.00500	0.00556	1	09/26/2019 13:55	WG1352512
Ethylbenzene	U		0.000590	0.00250	0.00278	1	09/26/2019 13:55	WG1352512
Total Xylenes	U		0.00532	0.00650	0.00723	1	09/26/2019 13:55	WG1352512
(S) Toluene-d8	*113*				*75.0-131*		*09/26/2019 13:55*	WG1352512
(S) 4-Bromofluorobenzene	*109*				*67.0-138*		*09/26/2019 13:55*	WG1352512
(S) 1,2-Dichloroethane-d4	*98.7*				*70.0-130*		*09/26/2019 13:55*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	5.56		1.79	4.00	4.45	1	09/29/2019 02:14	WG1353768
C28-C40 Oil Range	8.99		0.305	4.00	4.45	1	09/29/2019 02:14	WG1353768
(S) o-Terphenyl	*81.5*				*18.0-148*		*09/29/2019 02:14*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.7		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	65.8		0.848	10.0	10.7	1	09/24/2019 11:12	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0232	0.100	0.107	1	09/27/2019 20:06	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.4*				*77.0-120*		*09/27/2019 20:06*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000427	0.00100	0.00107	1	09/26/2019 14:16	WG1352512
Toluene	U		0.00133	0.00500	0.00533	1	09/26/2019 14:16	WG1352512
Ethylbenzene	U		0.000565	0.00250	0.00267	1	09/26/2019 14:16	WG1352512
Total Xylenes	U		0.00510	0.00650	0.00693	1	09/26/2019 14:16	WG1352512
(S) Toluene-d8	*116*				*75.0-131*		*09/26/2019 14:16*	WG1352512
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*09/26/2019 14:16*	WG1352512
(S) 1,2-Dichloroethane-d4	*101*				*70.0-130*		*09/26/2019 14:16*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	4.19	J	1.72	4.00	4.27	1	09/29/2019 02:27	WG1353768
C28-C40 Oil Range	11.5		0.292	4.00	4.27	1	09/29/2019 02:27	WG1353768
(S) o-Terphenyl	*81.4*				*18.0-148*		*09/29/2019 02:27*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.9		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	31.8	B	0.847	10.0	10.6	1	09/24/2019 11:41	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0231	0.100	0.106	1	09/27/2019 20:27	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.8*				*77.0-120*		*09/27/2019 20:27*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000426	0.00100	0.00106	1	09/26/2019 14:37	WG1352512
Toluene	U		0.00133	0.00500	0.00532	1	09/26/2019 14:37	WG1352512
Ethylbenzene	U		0.000564	0.00250	0.00266	1	09/26/2019 14:37	WG1352512
Total Xylenes	U		0.00509	0.00650	0.00692	1	09/26/2019 14:37	WG1352512
(S) Toluene-d8	*114*				*75.0-131*		*09/26/2019 14:37*	WG1352512
(S) 4-Bromofluorobenzene	*107*				*67.0-138*		*09/26/2019 14:37*	WG1352512
(S) 1,2-Dichloroethane-d4	*107*				*70.0-130*		*09/26/2019 14:37*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.26	J	1.71	4.00	4.26	1	09/29/2019 02:39	WG1353768
C28-C40 Oil Range	6.86		0.292	4.00	4.26	1	09/29/2019 02:39	WG1353768
(S) o-Terphenyl	*78.7*				*18.0-148*		*09/29/2019 02:39*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.8		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	251		0.917	10.0	11.5	1	09/24/2019 11:50	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	0.0275	B J	0.0250	0.100	0.115	1	09/30/2019 13:14	WG1354679
(S) a,a,a-Trifluorotoluene(FID)	*95.7*				*77.0-120*		*09/30/2019 13:14*	WG1354679

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000461	0.00100	0.00115	1	09/26/2019 14:57	WG1352512
Toluene	U		0.00144	0.00500	0.00576	1	09/26/2019 14:57	WG1352512
Ethylbenzene	U		0.000611	0.00250	0.00288	1	09/26/2019 14:57	WG1352512
Total Xylenes	U		0.00551	0.00650	0.00749	1	09/26/2019 14:57	WG1352512
(S) Toluene-d8	*111*				*75.0-131*		*09/26/2019 14:57*	WG1352512
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*09/26/2019 14:57*	WG1352512
(S) 1,2-Dichloroethane-d4	*99.3*				*70.0-130*		*09/26/2019 14:57*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.86	4.00	4.61	1	09/29/2019 02:52	WG1353768
C28-C40 Oil Range	1.29	J	0.316	4.00	4.61	1	09/29/2019 02:52	WG1353768
(S) o-Terphenyl	*79.3*				*18.0-148*		*09/29/2019 02:52*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.2		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2880		8.44	10.0	106	10	09/24/2019 12:00	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	J3	0.0230	0.100	0.106	1	09/27/2019 21:36	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.2*				*77.0-120*		*09/27/2019 21:36*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000425	0.00100	0.00106	1	09/26/2019 15:18	WG1352512
Toluene	U		0.00133	0.00500	0.00531	1	09/26/2019 15:18	WG1352512
Ethylbenzene	U		0.000563	0.00250	0.00265	1	09/26/2019 15:18	WG1352512
Total Xylenes	U		0.00508	0.00650	0.00690	1	09/26/2019 15:18	WG1352512
(S) Toluene-d8	*111*				*75.0-131*		*09/26/2019 15:18*	WG1352512
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*09/26/2019 15:18*	WG1352512
(S) 1,2-Dichloroethane-d4	*95.4*				*70.0-130*		*09/26/2019 15:18*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	6.51		1.71	4.00	4.25	1	09/29/2019 03:05	WG1353768
C28-C40 Oil Range	16.8		0.291	4.00	4.25	1	09/29/2019 03:05	WG1353768
(S) o-Terphenyl	*62.2*				*18.0-148*		*09/29/2019 03:05*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.0		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1650		8.64	10.0	109	10	09/24/2019 12:09	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0236	0.100	0.109	1	09/27/2019 21:56	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.7*				*77.0-120*		*09/27/2019 21:56*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000435	0.00100	0.00109	1	09/26/2019 15:39	WG1352512
Toluene	U		0.00136	0.00500	0.00543	1	09/26/2019 15:39	WG1352512
Ethylbenzene	U		0.000576	0.00250	0.00272	1	09/26/2019 15:39	WG1352512
Total Xylenes	U		0.00519	0.00650	0.00706	1	09/26/2019 15:39	WG1352512
(S) Toluene-d8	*113*				*75.0-131*		*09/26/2019 15:39*	WG1352512
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*09/26/2019 15:39*	WG1352512
(S) 1,2-Dichloroethane-d4	*98.4*				*70.0-130*		*09/26/2019 15:39*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	4.97		1.75	4.00	4.35	1	09/29/2019 03:17	WG1353768
C28-C40 Oil Range	11.5		0.298	4.00	4.35	1	09/29/2019 03:17	WG1353768
(S) o-Terphenyl	*80.2*				*18.0-148*		*09/29/2019 03:17*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.1		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	70.4		0.845	10.0	10.6	1	09/24/2019 12:19	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	0.0233	B J	0.0231	0.100	0.106	1	09/30/2019 13:34	WG1354679
(S) a,a,a-Trifluorotoluene(FID)	*97.8*				*77.0-120*		*09/30/2019 13:34*	WG1354679

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000425	0.00100	0.00106	1	09/26/2019 16:00	WG1352512
Toluene	U		0.00133	0.00500	0.00531	1	09/26/2019 16:00	WG1352512
Ethylbenzene	U		0.000563	0.00250	0.00266	1	09/26/2019 16:00	WG1352512
Total Xylenes	U		0.00508	0.00650	0.00691	1	09/26/2019 16:00	WG1352512
(S) Toluene-d8	*114*				*75.0-131*		*09/26/2019 16:00*	WG1352512
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*09/26/2019 16:00*	WG1352512
(S) 1,2-Dichloroethane-d4	*104*				*70.0-130*		*09/26/2019 16:00*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.71	4.00	4.25	1	09/29/2019 03:30	WG1353768
C28-C40 Oil Range	2.20	J	0.291	4.00	4.25	1	09/29/2019 03:30	WG1353768
(S) o-Terphenyl	*89.2*				*18.0-148*		*09/29/2019 03:30*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.5		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3250		8.59	10.0	108	10	09/24/2019 12:28	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0234	0.100	0.108	1	09/30/2019 13:55	WG1354679
(S) a,a,a-Trifluorotoluene(FID)	*95.2*				*77.0-120*		*09/30/2019 13:55*	WG1354679

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000432	0.00100	0.00108	1	09/26/2019 16:20	WG1352512
Toluene	U		0.00135	0.00500	0.00540	1	09/26/2019 16:20	WG1352512
Ethylbenzene	U		0.000573	0.00250	0.00270	1	09/26/2019 16:20	WG1352512
Total Xylenes	U		0.00517	0.00650	0.00702	1	09/26/2019 16:20	WG1352512
(S) Toluene-d8	*112*				*75.0-131*		*09/26/2019 16:20*	WG1352512
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*09/26/2019 16:20*	WG1352512
(S) 1,2-Dichloroethane-d4	*108*				*70.0-130*		*09/26/2019 16:20*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	12.3		1.74	4.00	4.32	1	09/29/2019 03:42	WG1353768
C28-C40 Oil Range	36.4		0.296	4.00	4.32	1	09/29/2019 03:42	WG1353768
(S) o-Terphenyl	*53.0*				*18.0-148*		*09/29/2019 03:42*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.0		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1350		4.47	10.0	56.2	5	09/24/2019 12:38	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0244	0.100	0.112	1	09/30/2019 14:50	WG1354679
(S) a,a,a-Trifluorotoluene(FID)	*94.3*				*77.0-120*		*09/30/2019 14:50*	WG1354679

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000449	0.00100	0.00112	1	09/26/2019 16:41	WG1352512
Toluene	U		0.00140	0.00500	0.00562	1	09/26/2019 16:41	WG1352512
Ethylbenzene	U		0.000595	0.00250	0.00281	1	09/26/2019 16:41	WG1352512
Total Xylenes	U		0.00537	0.00650	0.00730	1	09/26/2019 16:41	WG1352512
(S) Toluene-d8	*113*				*75.0-131*		*09/26/2019 16:41*	WG1352512
(S) 4-Bromofluorobenzene	*107*				*67.0-138*		*09/26/2019 16:41*	WG1352512
(S) 1,2-Dichloroethane-d4	*110*				*70.0-130*		*09/26/2019 16:41*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	14.8		1.81	4.00	4.49	1	09/27/2019 01:53	WG1352422
C28-C40 Oil Range	58.6		0.308	4.00	4.49	1	09/27/2019 01:53	WG1352422
(S) o-Terphenyl	*37.5*				*18.0-148*		*09/27/2019 01:53*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.8		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1060		4.15	10.0	52.2	5	09/24/2019 13:35	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0227	0.100	0.104	1	09/28/2019 03:12	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.4*				*77.0-120*		*09/28/2019 03:12*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000418	0.00100	0.00104	1	09/26/2019 17:01	WG1352512
Toluene	U		0.00131	0.00500	0.00522	1	09/26/2019 17:01	WG1352512
Ethylbenzene	U		0.000553	0.00250	0.00261	1	09/26/2019 17:01	WG1352512
Total Xylenes	U		0.00499	0.00650	0.00679	1	09/26/2019 17:01	WG1352512
(S) Toluene-d8	*113*				*75.0-131*		*09/26/2019 17:01*	WG1352512
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*09/26/2019 17:01*	WG1352512
(S) 1,2-Dichloroethane-d4	*99.5*				*70.0-130*		*09/26/2019 17:01*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.68	4.00	4.18	1	09/26/2019 21:54	WG1352422
C28-C40 Oil Range	U		0.286	4.00	4.18	1	09/26/2019 21:54	WG1352422
(S) o-Terphenyl	*78.6*				*18.0-148*		*09/26/2019 21:54*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.5		1	09/27/2019 13:46	WG1353381

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	4510		16.7	10.0	210	20	09/24/2019 13:44	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0227	0.100	0.105	1	09/28/2019 03:32	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*94.1*				*77.0-120*		*09/28/2019 03:32*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000419	0.00100	0.00105	1	09/26/2019 17:21	WG1352512
Toluene	U		0.00131	0.00500	0.00524	1	09/26/2019 17:21	WG1352512
Ethylbenzene	U		0.000555	0.00250	0.00262	1	09/26/2019 17:21	WG1352512
Total Xylenes	U		0.00501	0.00650	0.00681	1	09/26/2019 17:21	WG1352512
(S) Toluene-d8	*113*				*75.0-131*		*09/26/2019 17:21*	WG1352512
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*09/26/2019 17:21*	WG1352512
(S) 1,2-Dichloroethane-d4	*106*				*70.0-130*		*09/26/2019 17:21*	WG1352512

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	9.08		1.69	4.00	4.19	1	09/27/2019 01:16	WG1352422
C28-C40 Oil Range	30.8		0.287	4.00	4.19	1	09/27/2019 01:16	WG1352422
(S) o-Terphenyl	*47.2*				*18.0-148*		*09/27/2019 01:16*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.4		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3370		16.7	10.0	210	20	09/24/2019 13:54	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0227	0.100	0.105	1	09/28/2019 03:53	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*93.8*				*77.0-120*		*09/28/2019 03:53*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000419	0.00100	0.00105	1	09/28/2019 11:35	WG1353482
Toluene	U		0.00131	0.00500	0.00524	1	09/28/2019 11:35	WG1353482
Ethylbenzene	U		0.000555	0.00250	0.00262	1	09/28/2019 11:35	WG1353482
Total Xylenes	U		0.00501	0.00650	0.00681	1	09/28/2019 11:35	WG1353482
(S) Toluene-d8	*114*				*75.0-131*		*09/28/2019 11:35*	WG1353482
(S) 4-Bromofluorobenzene	*107*				*67.0-138*		*09/28/2019 11:35*	WG1353482
(S) 1,2-Dichloroethane-d4	*96.3*				*70.0-130*		*09/28/2019 11:35*	WG1353482

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	10.9		1.69	4.00	4.19	1	09/27/2019 01:28	WG1352422
C28-C40 Oil Range	37.1		0.287	4.00	4.19	1	09/27/2019 01:28	WG1352422
(S) o-Terphenyl	*46.7*				*18.0-148*		*09/27/2019 01:28*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.1		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2210		8.37	10.0	105	10	09/24/2019 14:03	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0228	0.100	0.105	1	09/28/2019 08:45	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*93.8*				*77.0-120*		*09/28/2019 08:45*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000421	0.00100	0.00105	1	09/26/2019 21:04	WG1352625
Toluene	U		0.00132	0.00500	0.00526	1	09/26/2019 21:04	WG1352625
Ethylbenzene	U		0.000558	0.00250	0.00263	1	09/26/2019 21:04	WG1352625
Total Xylenes	U		0.00503	0.00650	0.00684	1	09/26/2019 21:04	WG1352625
(S) Toluene-d8	*114*				*75.0-131*		*09/26/2019 21:04*	WG1352625
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*09/26/2019 21:04*	WG1352625
(S) 1,2-Dichloroethane-d4	*109*				*70.0-130*		*09/26/2019 21:04*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.69	4.00	4.21	1	09/26/2019 22:07	WG1352422
C28-C40 Oil Range	U		0.288	4.00	4.21	1	09/26/2019 22:07	WG1352422
(S) o-Terphenyl	*73.6*				*18.0-148*		*09/26/2019 22:07*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.3		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	2400		8.52	10.0	107	10	09/24/2019 14:13	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0233	0.100	0.107	1	09/28/2019 09:06	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*93.0*				*77.0-120*		*09/28/2019 09:06*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000429	0.00100	0.00107	1	09/26/2019 21:25	WG1352625
Toluene	U		0.00134	0.00500	0.00536	1	09/26/2019 21:25	WG1352625
Ethylbenzene	U		0.000568	0.00250	0.00268	1	09/26/2019 21:25	WG1352625
Total Xylenes	U		0.00512	0.00650	0.00697	1	09/26/2019 21:25	WG1352625
(S) Toluene-d8	*111*				*75.0-131*		*09/26/2019 21:25*	WG1352625
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*09/26/2019 21:25*	WG1352625
(S) 1,2-Dichloroethane-d4	*103*				*70.0-130*		*09/26/2019 21:25*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	9.70		1.73	4.00	4.29	1	09/27/2019 02:06	WG1352422
C28-C40 Oil Range	44.4		0.294	4.00	4.29	1	09/27/2019 02:06	WG1352422
(S) o-Terphenyl	*48.6*				*18.0-148*		*09/27/2019 02:06*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.9		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1470		4.28	10.0	53.8	5	09/24/2019 14:32	WG1350262

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0233	0.100	0.108	1	09/28/2019 09:26	WG1353634
(S) a,a,a-Trifluorotoluene(FID)	*93.3*				*77.0-120*		*09/28/2019 09:26*	WG1353634

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000430	0.00100	0.00108	1	09/26/2019 21:45	WG1352625
Toluene	U		0.00135	0.00500	0.00538	1	09/26/2019 21:45	WG1352625
Ethylbenzene	U		0.000570	0.00250	0.00269	1	09/26/2019 21:45	WG1352625
Total Xylenes	U		0.00514	0.00650	0.00699	1	09/26/2019 21:45	WG1352625
(S) Toluene-d8	*113*				*75.0-131*		*09/26/2019 21:45*	WG1352625
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*09/26/2019 21:45*	WG1352625
(S) 1,2-Dichloroethane-d4	*107*				*70.0-130*		*09/26/2019 21:45*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	14.4		1.73	4.00	4.30	1	09/27/2019 02:19	WG1352422
C28-C40 Oil Range	62.3		0.295	4.00	4.30	1	09/27/2019 02:19	WG1352422
(S) o-Terphenyl	*47.7*				*18.0-148*		*09/27/2019 02:19*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.8		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3340		8.85	10.0	111	10	09/24/2019 00:14	WG1350445

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0242	0.100	0.111	1	09/27/2019 21:55	WG1354028
(S) a,a,a-Trifluorotoluene(FID)	*99.7*				*77.0-120*		*09/27/2019 21:55*	WG1354028

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000445	0.00100	0.00111	1	09/26/2019 22:05	WG1352625
Toluene	U		0.00139	0.00500	0.00556	1	09/26/2019 22:05	WG1352625
Ethylbenzene	U		0.000590	0.00250	0.00278	1	09/26/2019 22:05	WG1352625
Total Xylenes	U		0.00532	0.00650	0.00723	1	09/26/2019 22:05	WG1352625
(S) Toluene-d8	*111*				*75.0-131*		*09/26/2019 22:05*	WG1352625
(S) 4-Bromofluorobenzene	*100*				*67.0-138*		*09/26/2019 22:05*	WG1352625
(S) 1,2-Dichloroethane-d4	*113*				*70.0-130*		*09/26/2019 22:05*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	7.39		1.79	4.00	4.45	1	09/26/2019 23:47	WG1352422
C28-C40 Oil Range	23.5		0.305	4.00	4.45	1	09/26/2019 23:47	WG1352422
(S) o-Terphenyl	*47.2*				*18.0-148*		*09/26/2019 23:47*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.0		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	44.0		0.819	10.0	10.3	1	09/24/2019 00:23	WG1350445

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0224	0.100	0.103	1	09/27/2019 22:16	WG1354028
(S) a,a,a-Trifluorotoluene(FID)	*102*				*77.0-120*		*09/27/2019 22:16*	WG1354028

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000412	0.00100	0.00103	1	09/26/2019 22:26	WG1352625
Toluene	U		0.00129	0.00500	0.00515	1	09/26/2019 22:26	WG1352625
Ethylbenzene	U		0.000546	0.00250	0.00258	1	09/26/2019 22:26	WG1352625
Total Xylenes	U		0.00493	0.00650	0.00670	1	09/26/2019 22:26	WG1352625
(S) Toluene-d8	*114*				*75.0-131*		*09/26/2019 22:26*	WG1352625
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*09/26/2019 22:26*	WG1352625
(S) 1,2-Dichloroethane-d4	*107*				*70.0-130*		*09/26/2019 22:26*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.66	4.00	4.12	1	09/29/2019 03:55	WG1353768
C28-C40 Oil Range	7.08		0.282	4.00	4.12	1	09/29/2019 03:55	WG1353768
(S) o-Terphenyl	*83.8*				*18.0-148*		*09/29/2019 03:55*	WG1353768

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.0		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	158		0.837	10.0	10.5	1	09/24/2019 00:33	WG1350445

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0229	0.100	0.105	1	09/27/2019 22:36	WG1354028
(S) a,a,a-Trifluorotoluene(FID)	*102*				*77.0-120*		*09/27/2019 22:36*	WG1354028

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000421	0.00100	0.00105	1	09/26/2019 22:46	WG1352625
Toluene	U		0.00132	0.00500	0.00527	1	09/26/2019 22:46	WG1352625
Ethylbenzene	U		0.000558	0.00250	0.00263	1	09/26/2019 22:46	WG1352625
Total Xylenes	U		0.00503	0.00650	0.00684	1	09/26/2019 22:46	WG1352625
(S) Toluene-d8	*112*				*75.0-131*		*09/26/2019 22:46*	WG1352625
(S) 4-Bromofluorobenzene	*105*				*67.0-138*		*09/26/2019 22:46*	WG1352625
(S) 1,2-Dichloroethane-d4	*110*				*70.0-130*		*09/26/2019 22:46*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.92	J	1.70	4.00	4.21	1	09/27/2019 00:38	WG1352422
C28-C40 Oil Range	8.76		0.289	4.00	4.21	1	09/27/2019 00:38	WG1352422
(S) o-Terphenyl	*62.5*				*18.0-148*		*09/27/2019 00:38*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.9		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	14.6	B	0.875	10.0	11.0	1	09/24/2019 19:52	WG1350714

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0239	0.100	0.110	1	09/27/2019 22:57	WG1354028
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*09/27/2019 22:57*	WG1354028

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000440	0.00100	0.00110	1	09/26/2019 23:07	WG1352625
Toluene	U		0.00138	0.00500	0.00550	1	09/26/2019 23:07	WG1352625
Ethylbenzene	U		0.000583	0.00250	0.00275	1	09/26/2019 23:07	WG1352625
Total Xylenes	U		0.00526	0.00650	0.00715	1	09/26/2019 23:07	WG1352625
(S) Toluene-d8	*115*				*75.0-131*		*09/26/2019 23:07*	WG1352625
(S) 4-Bromofluorobenzene	*106*				*67.0-138*		*09/26/2019 23:07*	WG1352625
(S) 1,2-Dichloroethane-d4	*103*				*70.0-130*		*09/26/2019 23:07*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.77	4.00	4.40	1	09/26/2019 23:35	WG1352422
C28-C40 Oil Range	U		0.302	4.00	4.40	1	09/26/2019 23:35	WG1352422
(S) o-Terphenyl	*71.7*				*18.0-148*		*09/26/2019 23:35*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	98.0		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	104		0.811	10.0	10.2	1	09/24/2019 20:10	WG1350714

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0224	0.100	0.103	1.01	09/27/2019 23:17	WG1354028
(S) a,a,a-Trifluorotoluene(FID)	*103*				*77.0-120*		*09/27/2019 23:17*	WG1354028

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000408	0.00100	0.00102	1	09/26/2019 23:27	WG1352625
Toluene	U		0.00128	0.00500	0.00510	1	09/26/2019 23:27	WG1352625
Ethylbenzene	U		0.000541	0.00250	0.00255	1	09/26/2019 23:27	WG1352625
Total Xylenes	U		0.00488	0.00650	0.00663	1	09/26/2019 23:27	WG1352625
(S) Toluene-d8	*112*				*75.0-131*		*09/26/2019 23:27*	WG1352625
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*09/26/2019 23:27*	WG1352625
(S) 1,2-Dichloroethane-d4	*112*				*70.0-130*		*09/26/2019 23:27*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	2.90	J	1.64	4.00	4.08	1	09/27/2019 01:03	WG1352422
C28-C40 Oil Range	13.2		0.280	4.00	4.08	1	09/27/2019 01:03	WG1352422
(S) o-Terphenyl	*62.2*				*18.0-148*		*09/27/2019 01:03*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	99.1		1	09/27/2019 13:32	WG1353382

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	184		0.802	10.0	10.1	1	09/24/2019 20:20	WG1350714

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0219	0.100	0.101	1	09/27/2019 23:38	WG1354028
(S) a,a,a-Trifluorotoluene(FID)	*102*				*77.0-120*		*09/27/2019 23:38*	WG1354028

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000403	0.00100	0.00101	1	09/26/2019 23:47	WG1352625
Toluene	U		0.00126	0.00500	0.00504	1	09/26/2019 23:47	WG1352625
Ethylbenzene	U		0.000535	0.00250	0.00252	1	09/26/2019 23:47	WG1352625
Total Xylenes	U		0.00482	0.00650	0.00656	1	09/26/2019 23:47	WG1352625
(S) Toluene-d8	*115*				*75.0-131*		*09/26/2019 23:47*	WG1352625
(S) 4-Bromofluorobenzene	*108*				*67.0-138*		*09/26/2019 23:47*	WG1352625
(S) 1,2-Dichloroethane-d4	*106*				*70.0-130*		*09/26/2019 23:47*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	5.12		1.62	4.00	4.03	1	09/27/2019 01:41	WG1352422
C28-C40 Oil Range	29.4		0.276	4.00	4.03	1	09/27/2019 01:41	WG1352422
(S) o-Terphenyl	*57.9*				*18.0-148*		*09/27/2019 01:41*	WG1352422

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.2		1	09/30/2019 07:58	WG1353383

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	750		0.845	10.0	10.6	1	09/24/2019 20:29	WG1350714

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0233	0.100	0.107	1.01	09/28/2019 08:11	WG1353697
(S) a,a,a-Trifluorotoluene(FID)	*101*				*77.0-120*		*09/28/2019 08:11*	WG1353697

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000425	0.00100	0.00106	1	09/27/2019 00:08	WG1352625
Toluene	U		0.00133	0.00500	0.00531	1	09/27/2019 00:08	WG1352625
Ethylbenzene	U		0.000563	0.00250	0.00266	1	09/27/2019 00:08	WG1352625
Total Xylenes	U		0.00508	0.00650	0.00690	1	09/27/2019 00:08	WG1352625
(S) Toluene-d8	*110*				*75.0-131*		*09/27/2019 00:08*	WG1352625
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*09/27/2019 00:08*	WG1352625
(S) 1,2-Dichloroethane-d4	*108*				*70.0-130*		*09/27/2019 00:08*	WG1352625

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.71	4.00	4.25	1	09/26/2019 22:57	WG1352422
C28-C40 Oil Range	0.649	J	0.291	4.00	4.25	1	09/26/2019 22:57	WG1352422
(S) o-Terphenyl	*72.2*				*18.0-148*		*09/26/2019 22:57*	WG1352422

Method Blank (MB)

(MB) R3455478-1 09/27/19 14:01

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1142081-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1142081-02 09/27/19 14:01 • (DUP) R3455478-3 09/27/19 14:01

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	93.3	95.7	1	2.55		10

Laboratory Control Sample (LCS)

(LCS) R3455478-2 09/27/19 14:01

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3455477-1 09/27/19 13:46

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1142081-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1142081-13 09/27/19 13:46 • (DUP) R3455477-3 09/27/19 13:46

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	92.5	93.1	1	0.605		10

Laboratory Control Sample (LCS)

(LCS) R3455477-2 09/27/19 13:46

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3455474-1 09/27/19 13:32

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1142081-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1142081-24 09/27/19 13:32 • (DUP) R3455474-3 09/27/19 13:32

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	90.9	89.9	1	1.08		10

Laboratory Control Sample (LCS)

(LCS) R3455474-2 09/27/19 13:32

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3455995-1 09/30/19 07:58

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

L1142087-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1142087-06 09/30/19 07:58 • (DUP) R3455995-3 09/30/19 07:58

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	93.6	93.8	1	0.173		10

Laboratory Control Sample (LCS)

(LCS) R3455995-2 09/30/19 07:58

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3454081-1 09/24/19 09:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	4.18	J	0.795	10.0

L1142081-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1142081-01 09/24/19 10:06 • (DUP) R3454081-3 09/24/19 10:15

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	110	112	1	1.90		20

L1142081-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1142081-19 09/24/19 14:13 • (DUP) R3454081-6 09/24/19 14:22

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2400	2290	10	4.54		20

Laboratory Control Sample (LCS)

(LCS) R3454081-2 09/24/19 09:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	204	102	90.0-110	

L1142081-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142081-15 09/24/19 12:47 • (MS) R3454081-4 09/24/19 12:57 • (MSD) R3454081-5 09/24/19 13:06

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	522	1070	1510	1490	84.4	80.6	1	80.0-120	E	E	1.33	20

Method Blank (MB)

(MB) R3453792-1 09/23/19 19:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	3.51	J	0.795	10.0

L1141708-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1141708-19 09/23/19 20:16 • (DUP) R3453792-3 09/23/19 20:25

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	88.0	97.0	1	9.74		20

L1141896-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1141896-04 09/23/19 22:48 • (DUP) R3453792-6 09/23/19 22:58

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2760	2750	10	0.521		20

Laboratory Control Sample (LCS)

(LCS) R3453792-2 09/23/19 19:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	216	108	90.0-110	

L1141779-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1141779-13 09/23/19 20:44 • (MS) R3453792-4 09/23/19 20:54 • (MSD) R3453792-5 09/23/19 21:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	8.47	555	526	109	103	1	80.0-120			5.42	20

Method Blank (MB)

(MB) R3454194-1 09/24/19 19:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	3.02	J	0.795	10.0

L1142081-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1142081-24 09/24/19 19:52 • (DUP) R3454194-3 09/24/19 20:00

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	14.6	14.1	1	2.92		20

L1142087-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1142087-16 09/24/19 23:59 • (DUP) R3454194-6 09/25/19 00:08

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	69.7	69.5	1	0.292		20

Laboratory Control Sample (LCS)

(LCS) R3454194-2 09/24/19 19:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	218	109	90.0-110	

L1142087-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142087-05 09/24/19 21:36 • (MS) R3454194-4 09/24/19 21:45 • (MSD) R3454194-5 09/24/19 21:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	25.4	554	549	106	105	1	80.0-120			0.987	20

Method Blank (MB)

(MB) R3455935-1 09/27/19 12:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0466	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*93.4*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3455935-2 09/27/19 14:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.16	93.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*77.0-120*	

L1142081-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142081-10 09/27/19 21:36 • (MS) R3455935-3 09/28/19 09:47 • (MSD) R3455935-4 09/28/19 10:07

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.84	U	2.06	1.46	35.2	25.0	1	10.0-151		J3	33.9	28
(S) a,a,a-Trifluorotoluene(FID)					*88.2*	*88.2*		*77.0-120*				

Method Blank (MB)

(MB) R3455677-2 09/28/19 03:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3455677-1 09/28/19 03:03 • (LCSD) R3455677-5 09/28/19 11:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.36	6.10	116	111	72.0-127			4.14	20
(S) a,a,a-Trifluorotoluene(FID)				*111*	*110*	*77.0-120*				

L1142072-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142072-06 09/28/19 07:50 • (MS) R3455677-3 09/28/19 11:15 • (MSD) R3455677-4 09/28/19 11:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	116	121	84.1	87.7	25	10.0-151			4.20	28
(S) a,a,a-Trifluorotoluene(FID)					*107*	*107*		*77.0-120*				

Method Blank (MB)

(MB) R3455560-3 09/27/19 14:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3455560-2 09/27/19 14:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.01	109	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*109*	*77.0-120*	

Method Blank (MB)

(MB) R3456148-3 09/30/19 10:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0289	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*94.1*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3456148-2 09/30/19 10:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.81	87.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*99.1*	*77.0-120*	

Method Blank (MB)

(MB) R3454858-3 09/26/19 07:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*113*			*75.0-131*
(S) 4-Bromofluorobenzene	*110*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3454858-1 09/26/19 06:18 • (LCSD) R3454858-2 09/26/19 06:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.0929	0.0884	74.3	70.7	70.0-123			4.93	20
Ethylbenzene	0.125	0.117	0.108	93.6	86.8	74.0-126			7.56	20
Toluene	0.125	0.115	0.110	91.7	88.0	75.0-121			4.10	20
Xylenes, Total	0.375	0.310	0.314	82.7	83.7	72.0-127			1.28	20
(S) Toluene-d8				*112*	*110*	*75.0-131*				
(S) 4-Bromofluorobenzene				*106*	*107*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*96.0*	*97.4*	*70.0-130*				

Method Blank (MB)

(MB) R3455303-2 09/26/19 20:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*117*			*75.0-131*
(S) 4-Bromofluorobenzene	*105*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3455303-1 09/26/19 19:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.0989	79.2	70.0-123	
Ethylbenzene	0.125	0.112	90.0	74.0-126	
Toluene	0.125	0.118	94.2	75.0-121	
Xylenes, Total	0.375	0.319	85.1	72.0-127	
(S) Toluene-d8			*109*	*75.0-131*	
(S) 4-Bromofluorobenzene			*104*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*113*	*70.0-130*	

L1142081-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142081-18 09/26/19 21:04 • (MS) R3455303-3 09/27/19 05:14 • (MSD) R3455303-4 09/27/19 05:35

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.132	U	0.0805	0.0939	61.2	71.4	1	10.0-149			15.3	37
Ethylbenzene	0.132	U	0.103	0.125	78.7	94.9	1	10.0-160			18.7	38
Toluene	0.132	U	0.103	0.119	78.5	90.3	1	10.0-156			14.0	38
Xylenes, Total	0.395	U	0.281	0.310	71.2	78.7	1	10.0-160			9.96	38
(S) Toluene-d8					*113*	*115*		*75.0-131*				
(S) 4-Bromofluorobenzene					*104*	*102*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*95.0*	*99.6*		*70.0-130*				

Method Blank (MB)

(MB) R3455688-2 09/28/19 10:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*114*			*75.0-131*
(S) 4-Bromofluorobenzene	*105*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*94.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3455688-1 09/28/19 09:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.0979	78.3	70.0-123	
Ethylbenzene	0.125	0.126	101	74.0-126	
Toluene	0.125	0.120	95.8	75.0-121	
Xylenes, Total	0.375	0.354	94.4	72.0-127	
(S) Toluene-d8			*113*	*75.0-131*	
(S) 4-Bromofluorobenzene			*105*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*101*	*70.0-130*	

Method Blank (MB)

(MB) R3455190-1 09/26/19 21:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*73.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3455190-2 09/26/19 21:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.3	80.6	50.0-150	
(S) o-Terphenyl			*78.5*	*18.0-148*	

Method Blank (MB)

(MB) R3455615-1 09/29/19 00:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*90.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3455615-2 09/29/19 00:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	42.1	84.2	50.0-150	
(S) o-Terphenyl			*81.8*	*18.0-148*	

L1142081-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1142081-01 09/29/19 00:46 • (MS) R3455615-3 09/29/19 00:59 • (MSD) R3455615-4 09/29/19 01:11

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	52.4	4.75	36.4	43.8	60.3	74.8	1	50.0-150			18.6	20
(S) o-Terphenyl					*49.2*	*57.5*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

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* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

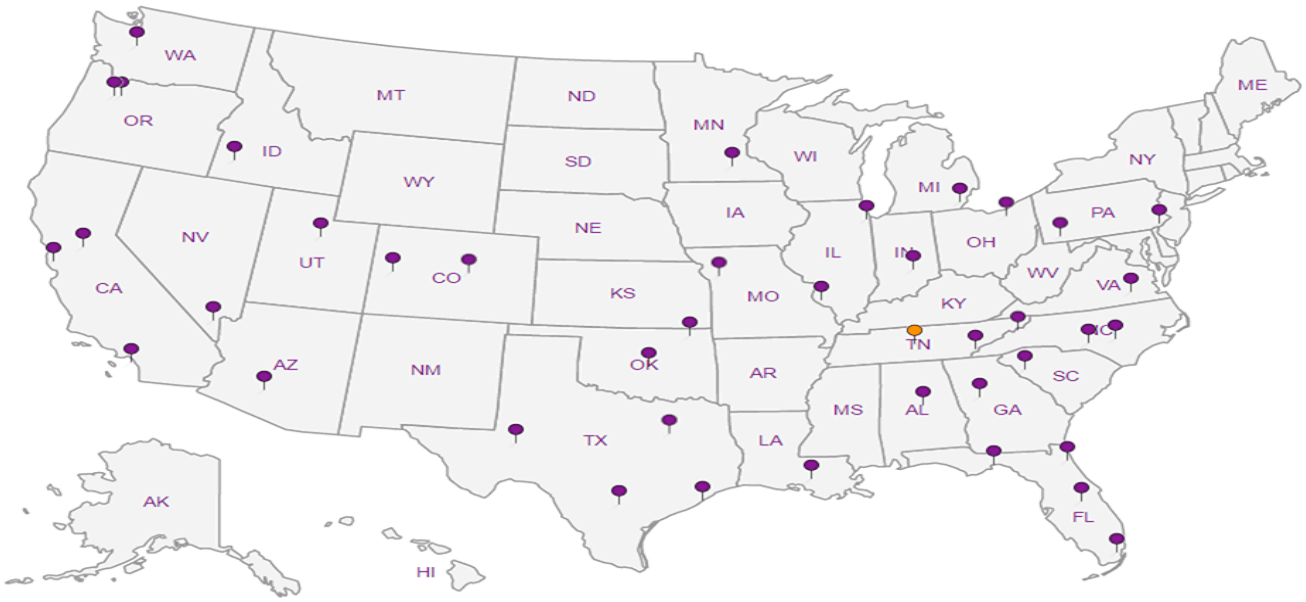
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



11/1/2081

Analysis Request of Chain of Custody Record

Page : 1 of 4

Tetra Tech, Inc.

901 West Wall Street, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

B247

Client Name:	Conoco Phillips	**Site Manager:**	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	**Project #:**	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	**Sampler Signature:**	

Comments: Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.

COPTETRA Acctnum

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R		HOLD
-01	BH-1 (0'- 1')	9/16/2019	1000		X				X			1	N	X		X												X						
02	BH-1 (2'- 3')	9/16/2019	1005		X				X			1	N	X		X												X						
03	BH-1 (4'- 5')	9/16/2019	1010		X				X			1	N	X		X												X						
	BH-1 (6'- 7')	9/16/2019	1020		X				X			1	N																					X
04	BH-2 (0'- 1')	9/16/2019	1030		X				X			1	N	X		X												X						
05	BH-2 (2'- 3')	9/16/2019	1035		X				X			1	N	X		X												X						
06	BH-2 (4'- 5')	9/16/2019	1040		X				X			1	N	X		X												X						
07	BH-3 (0'- 1')	9/16/2019	1050		X				X			1	N	X		X												X						
08	BH-3 (2'- 3')	9/16/2019	1055		X				X			1	N	X		X												X						
09	BH-3 (4'- 5')	9/16/2019	1100		X				X			1	N	X		X												X						

Relinquished by:	Date: 9-20-19	Time: 13:00	Received by: Date: 9.20.19 Time: 13:00
Relinquished by:	Date: 9.20.19	Time: 15:30	Received by: SwA Date: 9.20.19 Time: 15:30
Relinquished by:	Date:	Time:	Received by: Date: 9/21/19 Time: 8:30

LAB USE ONLY

Sample Temperature

3.0+0.3=3.3c

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901 West Wall Street, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	Conoco Phillips	**Site Manager:**	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	**Project #:**	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	**Sampler Signature:**	J. Llull
Comments:	Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.		***COPTETRA Acctnum***

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R		HOLD
10	BH-4 (0'- 1')	9/16/2019	1120		X				X			1	N	X		X												X						
11	BH-4 (2'- 3')	9/16/2019	1125		X				X			1	N	X		X												X						
12	BH-4 (4'- 5')	9/16/2019	1130		X				X			1	N	X		X												X						
13	BH-5 (0'- 1')	9/16/2019	1145		X				X			1	N	X		X												X						
14	BH-5 (2'- 3')	9/16/2019	1150		X				X			1	N	X		X												X						
15	BH-5 (4'- 5')	9/16/2019	1155		X				X			1	N	X		X												X						
	BH-5 (6'- 7')	9/16/2019	1200		X				X			1	N																					X
	BH-5 (9'- 10')	9/16/2019	1210		X				X			1	N																					X
	BH-5 (14'- 15')	9/16/2019	1225		X				X			1	N																					X
	BH-5 (19'- 20')	9/16/2019	1240		X				X			1	N																					X

Relinquished by: J. Llull	Date: 9-2019	Time: 13:00	Received by:	Date: 9.20	Time: 13:30
Relinquished by:	Date: 9.20	Time: 15:30	Received by: SwA	Date: 9.20	Time: 1530
Relinquished by:	Date:	Time:	Received by:	Date: 9/20/19	Time: 8:30

LAB USE ONLY

Sample Temperature: 3+0=3.2c

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901 West Wall Street, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	Conoco Phillips	**Site Manager:**	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	**Project #:**	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	**Sampler Signature:**	

Comments: Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.

COPTETRA Acctnum

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R		HOLD
	BH-5 (24'- 25')	9/16/2019	1255		X				X			1	N																					X
	BH-5 (29'- 30')	9/16/2019	1310		X				X			1	N																					X
16	BH-6 (0'- 1')	9/16/2019	1330		X				X			1	N	X		X												X						
17	BH-6 (2'- 3')	9/16/2019	1340		X				X			1	N	X		X												X						
18	BH-6 (4'- 5')	9/16/2019	1350		X				X			1	N	X		X												X						
	BH-6 (6'- 7')	9/16/2019	1400		X				X			1	N																					X
	BH-6 (9'- 10')	9/16/2019	1410		X				X			1	N																					X
19	BH-7 (0'- 1')	9/16/2019	1430		X				X			1	N	X		X												X						
20	BH-7 (2'- 3')	9/16/2019	1435		X				X			1	N	X		X												X						
21	BH-7 (4'- 5')	9/16/2019	1440		X				X			1	N	X		X												X						

	Date:	Time:		Date:	Time:
Relinquished by:	9-20-19	13:00	Received by:	9209	13:00
Relinquished by:	9.20.19	15:30	Received by:	9/20	15:30
Relinquished by:			Received by:	9/21/19	8:30

LAB USE ONLY

Sample Temperature 3.0 3.5

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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1142051

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901 West Wall Street, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	Conoco Phillips	**Site Manager:**	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	**Project #:**	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	**Sampler Signature:**	J. Lyles

Comments: Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.

COPTETRA Acctnum

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R		HOLD
	BH-7 (6'- 7')	9/16/2019	1445		X				X			1	N																					X
	BH-7 (9'- 10')	9/16/2019	1450		X				X			1	N																					X
22	BH-8 (0'- 1')	9/16/2019	1500		X				X			1	N	X		X												X						
23	BH-8 (2'- 3')	9/16/2019	1510		X				X			1	N	X		X												X						
24	BH-8 (4'- 5')	9/16/2019	1520		X				X			1	N	X		X												X						
	BH-8 (6'- 7')	9/16/2019	1530		X				X			1	N																					X
25	BH-9 (0'- 1')	9/16/2019	1545		X				X			1	N	X		X												X						
26	BH-9 (2'- 3')	9/16/2019	1550		X				X			1	N	X		X												X						
27	BH-9 (4'- 5')	9/16/2019	1555		X				X			1	N	X		X												X						
	BH-9 (6'- 7')	9/16/2019	1600		X				X			1	N																					X

Relinquished by: J Lyles	Date: 9-20-19	Time: 13:00	Received by:	Date: 9.20.19	Time:
Relinquished by:	Date: 9.20.19	Time: 15:30	Received by:	Date: 9.20.19	Time: 15:30
Relinquished by:	Date:	Time:	Received by:	Date: 9/21/19	Time: 8:30

LAB USE ONLY

Sample Temperature: 3+0=3.2

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: COPTETRA	1142081	
Cooler Received/Opened On: 9/21/19 Temperature:	3.0	
Received By: Paul Minnich		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 21, 2019

ConocoPhillips - Tetra Tech

Sample Delivery Group:	L1148640
Samples Received:	09/21/2019
Project Number:	212C-MS-01840
Description:	COP VGEU 19-01

Report To: Chrisian Llull
901 West Wall
Suite 100
Midland, TX 79701

Entire Report Reviewed By:

Chris McCord
Project Manager

TABLE OF CONTENTS

BH-5 (14-15') L1148640-01 Solid

Collected by: JT | Collected date/time: 09/16/19 12:25 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1363643	1	10/16/19 19:03	10/16/19 19:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1361375	10	10/14/19 00:10	10/14/19 09:18	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1362118	1	10/11/19 09:57	10/13/19 22:19	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1361770	1	10/11/19 09:57	10/12/19 12:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1362447	1	10/14/19 12:31	10/14/19 20:33	KME	Mt. Juliet, TN

BH-5 (24-25') L1148640-02 Solid

Collected by: JT | Collected date/time: 09/16/19 12:55 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1363448	1	10/15/19 17:22	10/15/19 17:33	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1361375	1	10/14/19 00:10	10/14/19 09:35	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1362118	1	10/11/19 09:57	10/13/19 22:43	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1361770	1	10/11/19 09:57	10/12/19 12:20	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1362447	1	10/14/19 12:31	10/14/19 20:46	KME	Mt. Juliet, TN

BH-5 (29-30') L1148640-03 Solid

Collected by: JT | Collected date/time: 09/16/19 13:10 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1363448	1	10/15/19 17:22	10/15/19 17:33	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1361375	1	10/14/19 00:10	10/14/19 09:51	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1362118	1	10/11/19 09:57	10/13/19 23:07	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1361770	1	10/11/19 09:57	10/12/19 12:41	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1362447	1	10/14/19 12:31	10/14/19 20:59	KME	Mt. Juliet, TN

BH-6 (6-7') L1148640-04 Solid

Collected by: JT | Collected date/time: 09/16/19 14:00 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1363448	1	10/15/19 17:22	10/15/19 17:33	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1361375	20	10/14/19 00:10	10/14/19 10:08	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1362118	1	10/11/19 09:57	10/13/19 23:54	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1361770	1	10/11/19 09:57	10/12/19 13:01	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1362447	1	10/14/19 12:31	10/14/19 21:11	KME	Mt. Juliet, TN

BH-7 (6-7') L1148640-05 Solid

Collected by: JT | Collected date/time: 09/16/19 14:45 | Received date/time: 09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1363448	1	10/15/19 17:22	10/15/19 17:33	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1361375	10	10/14/19 00:10	10/14/19 10:24	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1362118	1	10/11/19 09:57	10/14/19 00:18	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1361770	1	10/11/19 09:57	10/12/19 13:22	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1362447	1	10/14/19 12:31	10/15/19 11:10	TJD	Mt. Juliet, TN

BH-9 (6-7') L1148640-06 Solid

Collected by	Collected date/time	Received date/time
JT	09/16/19 16:00	09/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1363448	1	10/15/19 17:22	10/15/19 17:33	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1361375	1	10/14/19 00:10	10/14/19 10:41	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1362118	1	10/11/19 09:57	10/14/19 00:42	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1361770	1	10/11/19 09:57	10/12/19 13:42	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1362447	1	10/14/19 12:31	10/14/19 21:24	KME	Mt. Juliet, TN

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

Chris McCord
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.3		1	10/16/2019 19:11	WG1363643

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3020		8.61	10.0	108	10	10/14/2019 09:18	WG1361375

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	T8	0.0235	0.100	0.108	1	10/13/2019 22:19	WG1362118
(S) a,a,a-Trifluorotoluene(FID)	*94.5*				*77.0-120*		*10/13/2019 22:19*	WG1362118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U	T8	0.000433	0.00100	0.00108	1	10/12/2019 12:00	WG1361770
Toluene	0.00531	J T8	0.00135	0.00500	0.00542	1	10/12/2019 12:00	WG1361770
Ethylbenzene	0.00135	J T8	0.000574	0.00250	0.00271	1	10/12/2019 12:00	WG1361770
Total Xylenes	U	T8	0.00518	0.00650	0.00704	1	10/12/2019 12:00	WG1361770
(S) Toluene-d8	*104*				*75.0-131*		*10/12/2019 12:00*	WG1361770
(S) 4-Bromofluorobenzene	*103*				*67.0-138*		*10/12/2019 12:00*	WG1361770
(S) 1,2-Dichloroethane-d4	*99.9*				*70.0-130*		*10/12/2019 12:00*	WG1361770

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U	T8	1.74	4.00	4.33	1	10/14/2019 20:33	WG1362447
C28-C40 Oil Range	U	T8	0.297	4.00	4.33	1	10/14/2019 20:33	WG1362447
(S) o-Terphenyl	*70.8*				*18.0-148*		*10/14/2019 20:33*	WG1362447

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.5		1	10/15/2019 17:33	WG1363448

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	260		0.824	10.0	10.4	1	10/14/2019 09:35	WG1361375

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	T8	0.0225	0.100	0.104	1	10/13/2019 22:43	WG1362118
(S) a,a,a-Trifluorotoluene(FID)	*96.4*				*77.0-120*		*10/13/2019 22:43*	WG1362118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U	T8	0.000414	0.00100	0.00104	1	10/12/2019 12:20	WG1361770
Toluene	0.00537	T8	0.00129	0.00500	0.00518	1	10/12/2019 12:20	WG1361770
Ethylbenzene	U	T8	0.000549	0.00250	0.00259	1	10/12/2019 12:20	WG1361770
Total Xylenes	U	T8	0.00495	0.00650	0.00673	1	10/12/2019 12:20	WG1361770
(S) Toluene-d8	*103*				*75.0-131*		*10/12/2019 12:20*	WG1361770
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*10/12/2019 12:20*	WG1361770
(S) 1,2-Dichloroethane-d4	*98.8*				*70.0-130*		*10/12/2019 12:20*	WG1361770

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U	T8	1.67	4.00	4.14	1	10/14/2019 20:46	WG1362447
C28-C40 Oil Range	U	T8	0.284	4.00	4.14	1	10/14/2019 20:46	WG1362447
(S) o-Terphenyl	*79.5*				*18.0-148*		*10/14/2019 20:46*	WG1362447

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.8		1	10/15/2019 17:33	WG1363448

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	138		0.830	10.0	10.4	1	10/14/2019 09:51	WG1361375

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	T8	0.0227	0.100	0.104	1	10/13/2019 23:07	WG1362118
(S) a,a,a-Trifluorotoluene(FID)	*95.0*				*77.0-120*		*10/13/2019 23:07*	WG1362118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U	T8	0.000418	0.00100	0.00104	1	10/12/2019 12:41	WG1361770
Toluene	0.00478	J T8	0.00130	0.00500	0.00522	1	10/12/2019 12:41	WG1361770
Ethylbenzene	U	T8	0.000553	0.00250	0.00261	1	10/12/2019 12:41	WG1361770
Total Xylenes	U	T8	0.00499	0.00650	0.00679	1	10/12/2019 12:41	WG1361770
(S) Toluene-d8	*103*				*75.0-131*		*10/12/2019 12:41*	WG1361770
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*10/12/2019 12:41*	WG1361770
(S) 1,2-Dichloroethane-d4	*98.8*				*70.0-130*		*10/12/2019 12:41*	WG1361770

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U	T8	1.68	4.00	4.18	1	10/14/2019 20:59	WG1362447
C28-C40 Oil Range	U	T8	0.286	4.00	4.18	1	10/14/2019 20:59	WG1362447
(S) o-Terphenyl	*82.9*				*18.0-148*		*10/14/2019 20:59*	WG1362447

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.4		1	10/15/2019 17:33	WG1363448

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	6500		16.9	10.0	212	20	10/14/2019 10:08	WG1361375

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	T8	0.0230	0.100	0.106	1	10/13/2019 23:54	WG1362118
(S) a,a,a-Trifluorotoluene(FID)	*93.3*				*77.0-120*		*10/13/2019 23:54*	WG1362118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U	T8	0.000424	0.00100	0.00106	1	10/12/2019 13:01	WG1361770
Toluene	0.00498	J T8	0.00132	0.00500	0.00530	1	10/12/2019 13:01	WG1361770
Ethylbenzene	U	T8	0.000562	0.00250	0.00265	1	10/12/2019 13:01	WG1361770
Total Xylenes	U	T8	0.00506	0.00650	0.00689	1	10/12/2019 13:01	WG1361770
(S) Toluene-d8	*103*				*75.0-131*		*10/12/2019 13:01*	WG1361770
(S) 4-Bromofluorobenzene	*102*				*67.0-138*		*10/12/2019 13:01*	WG1361770
(S) 1,2-Dichloroethane-d4	*99.1*				*70.0-130*		*10/12/2019 13:01*	WG1361770

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U	T8	1.71	4.00	4.24	1	10/14/2019 21:11	WG1362447
C28-C40 Oil Range	U	T8	0.290	4.00	4.24	1	10/14/2019 21:11	WG1362447
(S) o-Terphenyl	*69.2*				*18.0-148*		*10/14/2019 21:11*	WG1362447

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.8		1	10/15/2019 17:33	WG1363448

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	3760		8.75	10.0	110	10	10/14/2019 10:24	WG1361375

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	T8	0.0239	0.100	0.110	1	10/14/2019 00:18	WG1362118
(S) a,a,a-Trifluorotoluene(FID)	*94.5*				*77.0-120*		*10/14/2019 00:18*	WG1362118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U	T8	0.000440	0.00100	0.00110	1	10/12/2019 13:22	WG1361770
Toluene	0.00545	J T8	0.00138	0.00500	0.00550	1	10/12/2019 13:22	WG1361770
Ethylbenzene	U	T8	0.000583	0.00250	0.00275	1	10/12/2019 13:22	WG1361770
Total Xylenes	U	T8	0.00526	0.00650	0.00716	1	10/12/2019 13:22	WG1361770
(S) Toluene-d8	*104*				*75.0-131*		*10/12/2019 13:22*	WG1361770
(S) 4-Bromofluorobenzene	*104*				*67.0-138*		*10/12/2019 13:22*	WG1361770
(S) 1,2-Dichloroethane-d4	*97.7*				*70.0-130*		*10/12/2019 13:22*	WG1361770

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	4.89	T8	1.77	4.00	4.40	1	10/15/2019 11:10	WG1362447
C28-C40 Oil Range	7.35	T8	0.302	4.00	4.40	1	10/15/2019 11:10	WG1362447
(S) o-Terphenyl	*68.4*				*18.0-148*		*10/15/2019 11:10*	WG1362447

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.7		1	10/15/2019 17:33	WG1363448

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	251		0.814	10.0	10.2	1	10/14/2019 10:41	WG1361375

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U	T8	0.0222	0.100	0.102	1	10/14/2019 00:42	WG1362118
(S) a,a,a-Trifluorotoluene(FID)	*93.6*				*77.0-120*		*10/14/2019 00:42*	WG1362118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U	T8	0.000409	0.00100	0.00102	1	10/12/2019 13:42	WG1361770
Toluene	0.00532	T8	0.00128	0.00500	0.00512	1	10/12/2019 13:42	WG1361770
Ethylbenzene	U	T8	0.000542	0.00250	0.00256	1	10/12/2019 13:42	WG1361770
Total Xylenes	U	T8	0.00489	0.00650	0.00665	1	10/12/2019 13:42	WG1361770
(S) Toluene-d8	*105*				*75.0-131*		*10/12/2019 13:42*	WG1361770
(S) 4-Bromofluorobenzene	*100*				*67.0-138*		*10/12/2019 13:42*	WG1361770
(S) 1,2-Dichloroethane-d4	*100*				*70.0-130*		*10/12/2019 13:42*	WG1361770

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U	T8	1.65	4.00	4.09	1	10/14/2019 21:24	WG1362447
C28-C40 Oil Range	U	T8	0.280	4.00	4.09	1	10/14/2019 21:24	WG1362447
(S) o-Terphenyl	*82.8*				*18.0-148*		*10/14/2019 21:24*	WG1362447

Method Blank (MB)

(MB) R3461494-1 10/15/19 17:33

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1150027-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150027-01 10/15/19 17:33 • (DUP) R3461494-3 10/15/19 17:33

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	83.7	83.9	1	0.136		10

Laboratory Control Sample (LCS)

(LCS) R3461494-2 10/15/19 17:33

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	51.0	102	85.0-115	

Method Blank (MB)

(MB) R3461964-1 10/16/19 19:11

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1148626-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1148626-01 10/16/19 19:11 • (DUP) R3461964-3 10/16/19 19:11

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	87.5	87.3	1	0.251		10

Laboratory Control Sample (LCS)

(LCS) R3461964-2 10/16/19 19:11

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3460716-1 10/14/19 02:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	2.82	J	0.795	10.0

L1147945-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1147945-13 10/14/19 03:17 • (DUP) R3460716-3 10/14/19 03:34

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	106	104	1	1.49		20

L1148529-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1148529-04 10/14/19 07:07 • (DUP) R3460716-6 10/14/19 07:24

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11000	11200	100	1.37		20

Laboratory Control Sample (LCS)

(LCS) R3460716-2 10/14/19 02:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	217	108	90.0-110	

L1148061-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148061-05 10/14/19 04:39 • (MS) R3460716-4 10/14/19 04:56 • (MSD) R3460716-5 10/14/19 05:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	543	2970	3520	3550	100	106	1	80.0-120	E	E	0.833	20

Method Blank (MB)

(MB) R3462385-2 10/13/19 17:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*96.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3462385-1 10/13/19 16:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.68	85.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.3*	*77.0-120*	

Method Blank (MB)

(MB) R3460564-2 10/12/19 10:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	*105*			*75.0-131*
(S) 4-Bromofluorobenzene	*102*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*96.1*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3460564-1 10/12/19 09:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00501	100	70.0-123	
Ethylbenzene	0.00500	0.00515	103	74.0-126	
Toluene	0.00500	0.00468	93.6	75.0-121	
Xylenes, Total	0.0150	0.0132	88.0	72.0-127	
(S) Toluene-d8			*104*	*75.0-131*	
(S) 4-Bromofluorobenzene			*104*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

L1146066-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1146066-05 10/12/19 15:47 • (MS) R3460564-3 10/12/19 17:31 • (MSD) R3460564-4 10/12/19 17:52

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.00	ND	0.696	0.641	69.6	64.1	8	10.0-149			8.23	37
Ethylbenzene	1.00	0.453	1.26	1.16	80.7	70.7	8	10.0-160			8.26	38
Toluene	1.00	ND	0.675	0.563	66.0	54.8	8	10.0-156			18.1	38
Xylenes, Total	3.00	1.38	3.68	3.43	76.7	68.3	8	10.0-160			7.03	38
(S) Toluene-d8					*105*	*102*		*75.0-131*				
(S) 4-Bromofluorobenzene					*107*	*103*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*102*	*102*		*70.0-130*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3461012-1 10/14/19 20:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*75.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3461012-2 10/14/19 20:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.2	80.4	50.0-150	
(S) o-Terphenyl			*97.6*	*18.0-148*	

L1148616-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148616-01 10/14/19 23:55 • (MS) R3461012-3 10/15/19 00:08 • (MSD) R3461012-4 10/15/19 00:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	ND	111	147	222	294	5	50.0-150	J5	J3 J5	27.9	20
(S) o-Terphenyl					*83.5*	*77.3*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
T8	Sample(s) received past/too close to holding time expiration.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

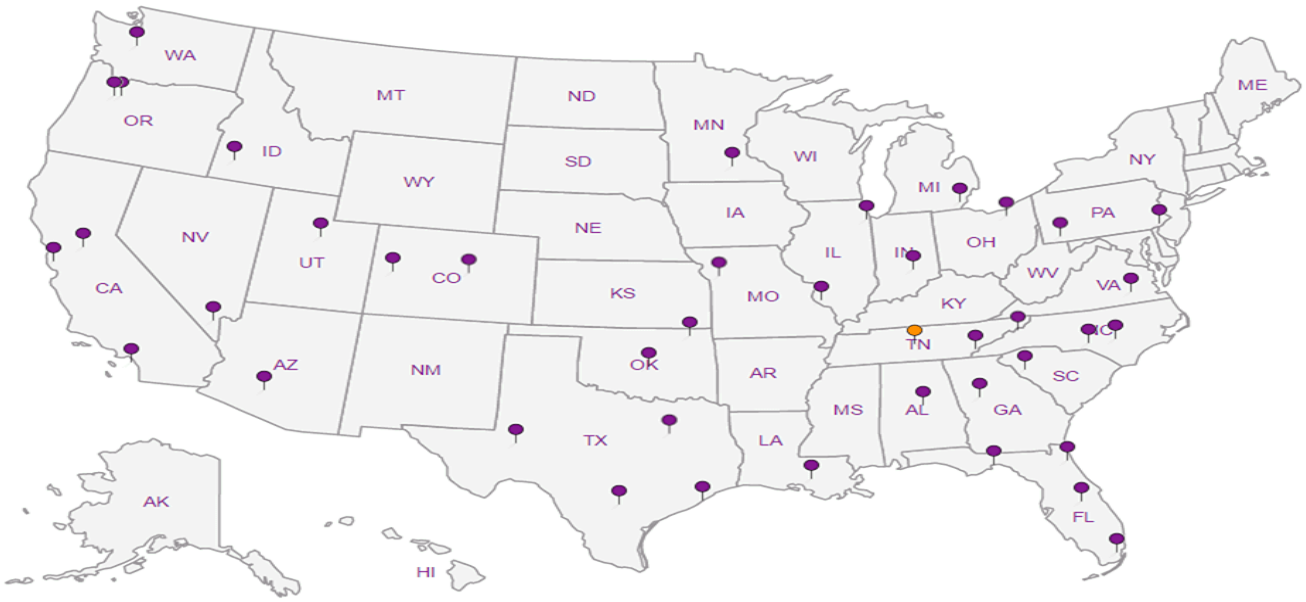
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HH2081 MS 10/1

Analysis Request of Chain of Custody Record

Tetra Tech. Inc.

901 West Wall Street, Suite 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

1147640

Client Name:	Conoco Phillips	**Site Manager:**	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	**Project #:**	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	**Sampler Signature:**	J. Llull

Comments: Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.

COPTETRA Acctnum

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R	HOLD
10	BH-4 (0'- 1')	9/16/2019	1120		X				X		1	N	X		X												X					
11	BH-4 (2'- 3')	9/16/2019	1125		X				X		1	N	X		X												X					
12	BH-4 (4'- 5')	9/16/2019	1130		X				X		1	N	X		X												X					
13	BH-5 (0'- 1')	9/16/2019	1145		X				X		1	N	X		X												X					
14	BH-5 (2'- 3')	9/16/2019	1150		X				X		1	N	X		X												X					
15	BH-5 (4'- 5')	9/16/2019	1155		X				X		1	N	X		X												X					
	BH-5 (6'- 7')	9/16/2019	1200		X				X		1	N																				X
	BH-5 (9'- 10')	9/16/2019	1210		X				X		1	N																				X
01	BH-5 (14'- 15')	9/16/2019	1225		X				X		1	N																				X
	BH-5 (19'- 20')	9/16/2019	1240		X				X		1	N																				X

Relinquished by: J. Llull	Date: 9-2019	Time: 13:00	Received by:	Date: 9.20	Time: 13:00
Relinquished by:	Date: 9.20	Time: 15:30	Received by: SwA	Date: 9.20	Time: 1530
Relinquished by:	Date:	Time:	Received by:	Date: 9/20/19	Time: 8:30

LAB USE ONLY

Sample Temperature: 3 to 3.5c

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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1142ost M 7/16/19

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901 West Wall Street, Suite 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

1143640

Client Name:	Conoco Phillips	**Site Manager:**	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	**Project #:**	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	**Sampler Signature:**	

Comments: Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.

COPTETRA Acctnum

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: NONE	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chlonde 300.0	Chlonde Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R		HOLD
02	BH-5 (24'- 25')	9/16/2019	1255		X				X			1	N																					X
03	BH-5 (29'- 30')	9/16/2019	1310		X				X			1	N																					X
16	BH-6 (0'- 1')	9/16/2019	1330		X				X			1	N	X		X												X					
17	BH-6 (2'- 3')	9/16/2019	1340		X				X			1	N	X		X												X					
18	BH-6 (4'- 5')	9/16/2019	1350		X				X			1	N	X		X												X					
04	BH-6 (6'- 7')	9/16/2019	1400		X				X			1	N																					X
	BH-6 (9'- 10')	9/16/2019	1410		X				X			1	N																					X
19	BH-7 (0'- 1')	9/16/2019	1430		X				X			1	N	X		X												X					
20	BH-7 (2'- 3')	9/16/2019	1435		X				X			1	N	X		X												X					
21	BH-7 (4'- 5')	9/16/2019	1440		X				X			1	N	X		X												X					

Relinquished by:	Date: 9-20-19	Time: 13:00	Received by: Date: 9209 Time: 13:00
Relinquished by:	Date: 9.20.19	Time: 15:30	Received by: SwA Date: 9.20 Time: 15:30
Relinquished by:	Date:	Time:	Received by: Date: 9/21/19 Time: 8:30

LAB USE ONLY

Sample Temperature 3+0=3.2

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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1142081 pg 1 of 2

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901 West Wall Street, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

1148648

Client Name:	Conoco Phillips	Site Manager:	Chrisian Llull
Project Name:	COP VGEU 19-01		
Project Location: (county, state)	Lea County, New Mexico	Project #:	212C-MD-01840
Invoice to:	Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701		
Receiving Laboratory:	Pace Analytical	Sampler Signature:	

Comments: Run deeper samples if GRO+DRO exceeds 100 mg/kg or if benzene exceeds 10 mg/kg or if total BTEX exceeds 50 mg/kg or if chlorides exceed 600 mg/kg.

COPTETRA Acctnum

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD NONE	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R		HOLD
05	BH-7 (6'- 7')	9/16/2019	1445		X				X			1	N																					X
	BH-7 (9'- 10')	9/16/2019	1450		X				X			1	N																					X
22	BH-8 (0'- 1')	9/16/2019	1500		X				X			1	N	X		X												X						
23	BH-8 (2'- 3')	9/16/2019	1510		X				X			1	N	X		X												X						
24	BH-8 (4'- 5')	9/16/2019	1520		X				X			1	N	X		X												X						
	BH-8 (6'- 7')	9/16/2019	1530		X				X			1	N																					X
25	BH-9 (0'- 1')	9/16/2019	1545		X				X			1	N	X		X												X						
26	BH-9 (2'- 3')	9/16/2019	1550		X				X			1	N	X		X												X						
27	BH-9 (4'- 5')	9/16/2019	1555		X				X			1	N	X		X												X						
06	BH-9 (6'- 7')	9/16/2019	1600		X				X			1	N																					X

	Date:	Time:		Date:	Time:
Relinquished by:	9-20-19	13:00	Received by:	9.20.19	
Relinquished by:	9.20.19	15:30	Received by:	9.20.19	15:30
Relinquished by:			Received by:	9/21/19	8:30

LAB USE ONLY

Sample Temperature: 3+0=3.2

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Matt Shacklock

From: Chris McCord
Sent: Wednesday, October 9, 2019 2:57 PM
To: Project Service
Subject: L1142081 *COPTETRA* log from hold 9-148

Please log hold samples BH-5 (14-15'), BH-5 (24-25'), BH-5 (29-30'), BH-6 (6-7'), BH-7 (6-7'), and BH-9 (6-7') for V8260BTEX, GRO, DRORLA, CHLORIDE-300, and TS. Log as R5 due 10/16.

Thanks,
Christopher McCord
Project Manager

Pace Analytical National Center for Testing & Innovation
12065 Lebanon Road | Mt. Juliet, TN 37122
615.773.3281 | Cell 615.504.3183
cmccord@pacenational.com|pacenational.com

ESC Lab Sciences is now Pace Analytical National Center for Testing & Innovation! Please make note of my new email address and website.

From: Dickerson, Ryan [mailto:Ryan.Dickerson@tetratech.com]
Sent: Wednesday, October 09, 2019 2:24 PM
To: Chris McCord
Cc: Llull, Christian
Subject: COP - VGEU 19-01, Project Number: 212C-MD-01840

Chris,
Can you run the following "on-hold" samples for chloride, GRO, DRO, ORO and BTEX?
BH-5 (14-15')
BH-5 (24-25')
BH-5 (29-30')
BH-6 (6-7')
BH-7 (6-7')
BH-9 (6-7')

Thanks,

Ryan Dickerson | Senior Staff Geologist
Direct **+1 (512) 338-2889** | Main **+1 (512) 338-1667** | Cell **+1 (512) 217-7254** | ryan.dickerson@tetratech.com

Tetra Tech | *Leading with Science®* | OGA
8911 N. Capital of TX Hwy. | Bldg. 2, Ste 2310 | Austin, TX 78759 | tetratech.com

APPENDIX E
Photographic Documentation

TETRA TECH, INC. PROJECT NO. 212C-MD-01840	DESCRIPTION	View north. Site signage at pump jack.	1
	SITE NAME	VGEU 19-01 Flowline Release	7/16/2019

TETRA TECH, INC. PROJECT NO. 212C-MD-01840	DESCRIPTION	View southeast. Release area on the eastern side of the Site.	2
	SITE NAME	VGEU 19-01 Flowline Release	7/16/2019

TETRA TECH, INC. PROJECT NO. 212C-MD-01840	DESCRIPTION	View east. Area of release north/northwest of pump jack.	3
	SITE NAME	VGEU 19-01 Flowline Release	7/16/2019

TETRA TECH, INC. PROJECT NO. 212C-MD-01840	DESCRIPTION	View overhead. Repaired flowline at release source.	4
	SITE NAME	VGEU 19-01 Flowline Release	7/16/2019

TETRA TECH, INC. PROJECT NO. 212C-MD-01840	DESCRIPTION	View east. Southeastern portion of release area.	5
	SITE NAME	VGEU 19-01 Flowline Release	7/16/2019