TETRA TECH

February 16, 2022

District Supervisor
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Release Characterization and Closure Request
ConocoPhillips
SEMU Cass Penn (SEMU BTD #70) Flowline Release
Unit Letter I, Section 15, Township 20 South, Range 37 East
Lea County, New Mexico
Incident ID: NRM2026250365

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips (COP) to evaluate a release that occurred from a flowline at the SEMU Cass Penn Battery. The release footprint is located in Public Land Survey System (PLSS) Unit Letter I, Section 15, Township 20 South, Range 37 East, in Lea County, New Mexico (Site). The approximate release area is located at coordinates 32.571111°, -103.233889°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico C-141 Initial Report (Appendix A), the release was discovered on September 11, 2020. The C-141 notes the adjacent well SEMU BTD #70, API# 30-025-06115. The release reportedly occurred as the result of a pinhole leak from a flowline at the battery pad and, according to the spill volume estimate form provided with the C-141, encompasses an estimated 3,510 square feet of lease pad. According to the C-141, the release did not leave location. Approximately 6.2 barrels (bbls) of oil and 0.3 bbls of produced water were reported released, of which 2 bbls of oil and 0 bbls of produced water were recovered. The New Mexico Oil Conservation Division (NMOCD) received the C-141 report form for the release on September 11, 2020. The NMOCD incident ID for this release is NRM2026250365.

SITE CHARACTERIZATION

A site characterization was performed and no watercourses, sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, playa lakes, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is in an area of low karst potential. According to the New Mexico Office of the State Engineers (NMOSE) reporting system, there are no water wells within ½ mile (800 meters) of the Site.

The remediation action levels proposed for the site are largely dependent upon depth to groundwater. As such, the OCD focuses upon depth to water estimation. Thus, 19.15.11(A)(2) NMAC allows for various means of determining depth to groundwater. For this release, as the available water level information was from wells further than ½ mile away from the site, COP reviewed adjacent release sites with approved Work Plans for the possibility of associated borings which could provide a means for determining depth to groundwater in the nRM1926751506 release area. As such, subsurface data from the SEMU Eumont 84 Release Site (NJXK1604825469) was reviewed.

Tetra Tech
901 West Wall St., Suite 100, Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

One boring (BH-1) drilled as a portion of the SEMU Eumont 84 release characterization was identified as being located within a ½ mile radius of the Cass Penn release footprint. A review of the associated boring logs indicates that boring BH-1 does not define depth to groundwater but was dry to approximately 45 feet bgs. Thus, based on this data, COP proposes to use the 51 feet-100 feet criteria listed in Table I of 19.15.29.12 NMAC. The boring log from the SEMU Eumont 84 investigation is included in Appendix B. The remainder of the site characterization data is also included in Appendix B.

REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the site characterization and in accordance with Table I of 19.15.29.12 NMAC, the remediation RRALs for the Site are as follows:

Constituent	Remediation RRAL
Chloride	10,000 mg/kg
TPH	2,500 mg/kg
BTEX	50 mg/kg

SITE ASSESSMENT

On February 2, 2022 Tetra Tech personnel were onsite to conduct a soil assessment and take photos of the current conditions at the site. While no hydrocarbon staining is visible in the reported release area, identified areas of the release extent indicted signs of disturbed caliche and remedial action. Photographic documentation from the site assessment is included in Appendix D.

A total of five (5) soil borings (AH-1 through AH-5) were installed using a hand auger to define the extents of the release and to assess the release extent (Figure 3). AH-5 was installed within the release footprint to a depth of 8 feet bgs to assess the vertical extent of impacted soil. AH-1 through AH-4 were installed to a depth of 2 feet bgs to assess the lateral extent of impacted soil. AH-1 and AH-2 were installed within the pad extent to the west and north of the release footprint respectively. AH-3 and AH-4 were installed outside of the pad boundary with AH-3 in the vegetated area to the east of the release footprint and AH-4 to the south on the opposite side of the lease road.

A total of seventeen (17) soil samples were collected from the five (5) boring locations within and surrounding the former release extent. These soil samples were sent to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for TPH by EPA method 8015 modified, BTEX by EPA method 8260B, and chlorides by EPA method 300.0. Copies of analytical reports and chain-of-custody documentation are included in Appendix C. Soil boring logs, included as Appendix E, present soil descriptions, sample depths, and field screening data from the 2022 assessment activities.

SUMMARY OF SAMPLING RESULTS

Results from the February 2022 soil sampling event are summarized in Table 1. The boring locations are shown in Figure 3. All analytical results were below Site RRALs. Horizontal and vertical delineation was achieved during the assessment.

CONCLUSION

At the time of abandonment, retrofit, or inactivity, full remediation will be completed in addition to reclamation. Based on the results of the site assessment and release delineation, the current release footprint is fully delineated. The contamination is located in and around areas of aboveground flowlines and does not cause an imminent risk to human health, the environment, or groundwater. Final remediation and

reclamation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the Site is no longer being used for oil and gas operations. The impacted surface area from the release occurs on a production pad and meets the standards of Table I of 19.15.29.12 NMAC.

Based on the above, ConocoPhillips requests closure for this release at the SEMU Cass Penn Battery. The completed C-141 forms are enclosed in Appendix A. If you have any questions concerning the soil assessment for the Site, please call me at (512) 338-2861.

Sincerely,
Tetra Tech, Inc.

Christian M. Llull, P.G.
Project Manager

cc:
Mr. Rahul Kaushik – ConocoPhillips
Ms. Kelsy Waggaman, GPBU – ConocoPhillips
Mr. Gustavo Fejervary-Morena, ConocoPhillips

LIST OF ATTACHMENTS

Figures:

Figure 1 – Overview Map
Figure 2 – Topographic Map
Figure 3 – Approximate Release Extent and Site Assessment

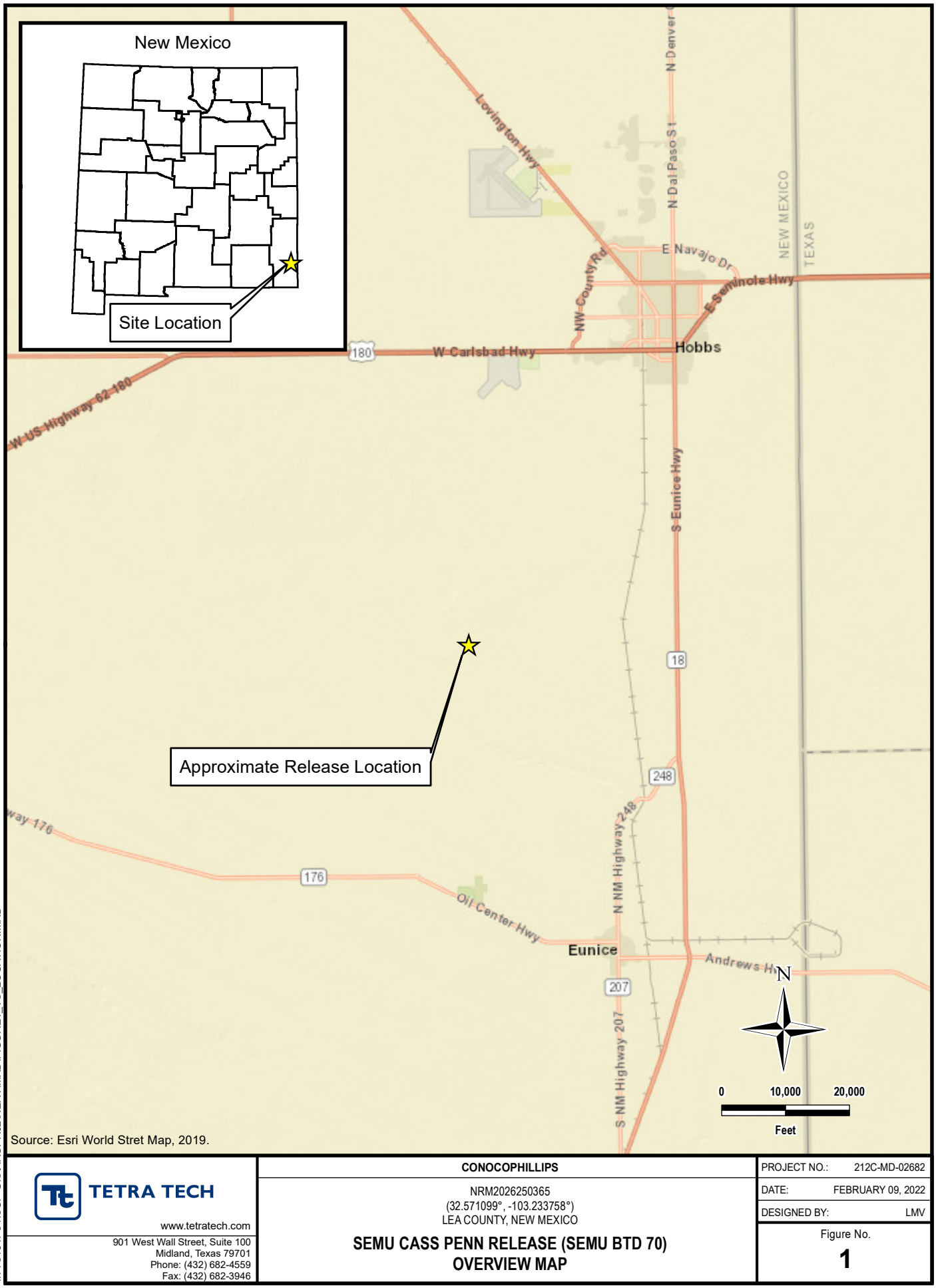
Tables:

Table 1 – Summary of Analytical Results – Soil Assessment

Appendices:

Appendix A – C-141 Forms
Appendix B – Site Characterization Data
Appendix C – Laboratory Analytical Data
Appendix D – Photographic Documentation
Appendix E – Soil Boring Logs

FIGURES



Source: Esri World Stret Map, 2019.

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

TETRA TECH
www.tetratech.com
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Phone: (432) 682-4559
Fax: (432) 682-3946

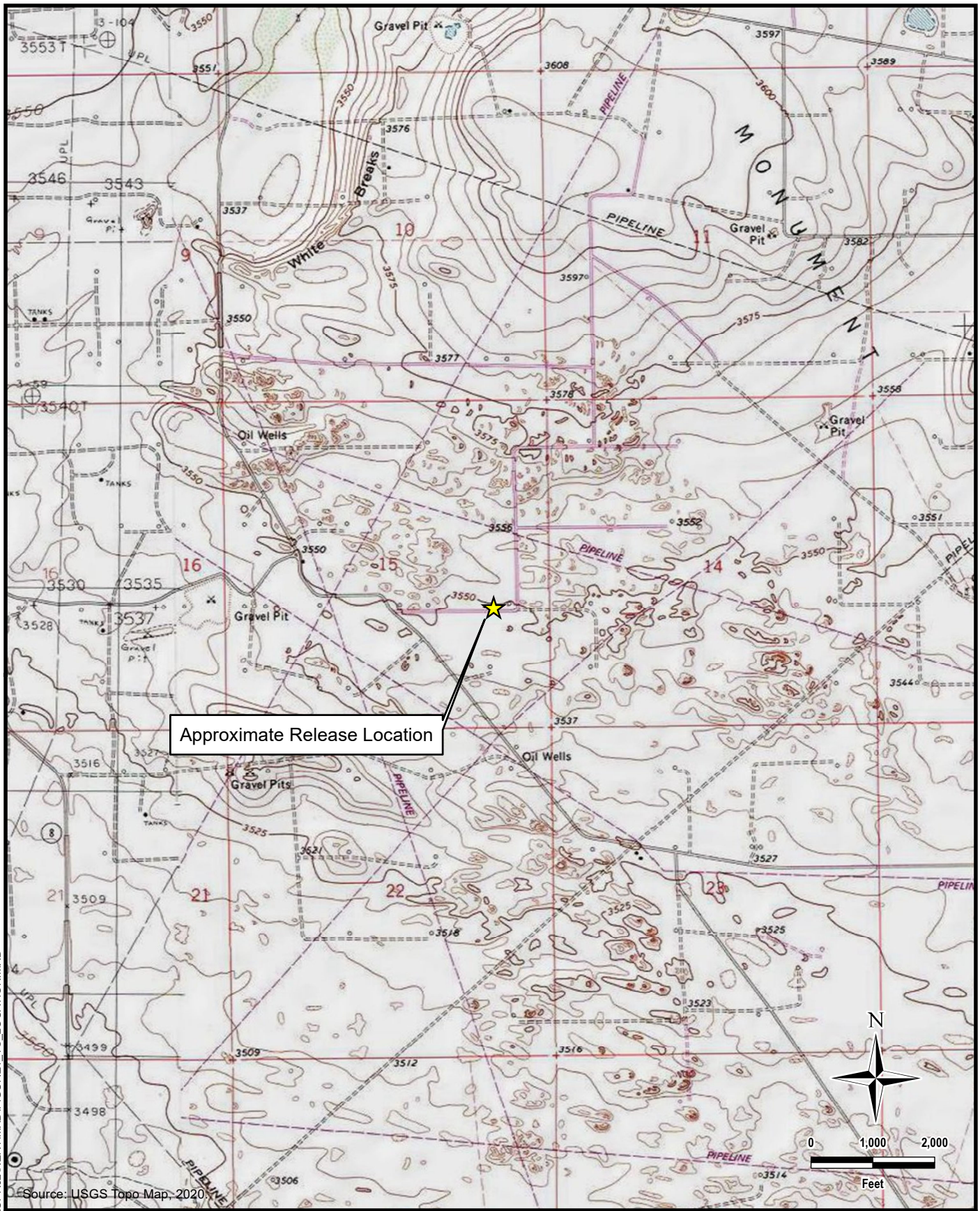
CONOCOPHILLIPS

NRM2026250365
(32.571099°, -103.233758°)
LEA COUNTY, NEW MEXICO

SEMU CASS PENN RELEASE (SEMU BTD 70)
OVERVIEW MAP

PROJECT NO.:	212C-MD-02682
DATE:	FEBRUARY 09, 2022
DESIGNED BY:	LMV

Figure No.
1



Source: USGS Topo Map, 2020

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

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CONOCOPHILLIPS

NRM2026250365
(32.571099°, -103.233758°)
LEA COUNTY, NEW MEXICO

SEMU CASS PENN RELEASE (SEMU BTD 70)
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-02682
DATE:	FEBRUARY 09, 2022
DESIGNED BY:	LMV

Figure No.
2

DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\SEMU\212C-MD-02682_SEMU_BTD_70\FIGURE 3 RELEASE EXTENT_SEMU BMT 70.MXD

TETRA TECH
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Phone: (432) 682-4559
Fax: (432) 682-3946

CONOCOPHILLIPS

NRM2026250365
(32.571099°, -103.233758°)
LEA COUNTY, NEW MEXICO

SEMU CASS PENN RELEASE (SEMU BTD 70)
APPROXIMATE RELEASE EXTENT AND ASSESSMENT

PROJECT NO.:	212C-MD-02682
DATE:	FEBRUARY 09, 2022
DESIGNED BY:	LMV

Figure No.
3

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
SOIL ASSESSMENT- NRM2026250365
CONOCOPHILLIPS
SEMU CASS PENN / BTD #70 RELEASE
LEA COUNTY, NM

Sample ID	Sample Date	Sample Depth	Field Screening Results		Chloride[1]		BTEX[2]										TPH[3]							
			Chloride	PID			Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH
																	C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}		(GRO+DRO+EXT DRO)
		ft. bgs	ppm		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	Q	mg/kg
AH-1	2/2/2022	0-1	487	-	224		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
		1-2	154	-	80.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		15.4		< 10.0		15.4
AH-2	2/2/2022	0-1	16.9	-	32.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
		1-2	26.4	-	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
AH-3	2/2/2022	0-1	23.8	-	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
		1-2	21.3	-	16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
AH-4	2/2/2022	0-1	127	-	80.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
		1-2	96.0	-	16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-
AH-5	2/2/2022	0-1	38.7	-	16.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		26.5		20.0		46.5
		2-3	27.9	-	32.0		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		170		149		319
		4-5	180	-	128		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		20.1		16.7		36.8
		7-8	252	-	208		< 0.050		< 0.050		< 0.050		< 0.150		< 0.300		< 10.0		< 10.0		< 10.0		-

NOTES:

ft. Feet
bgs Below ground surface
mg/kg Milligrams per kilogram
TPH Total Petroleum Hydrocarbons
GRO Gasoline range organics
DRO Diesel range organics
1 Method SM4500Cl-B
2 Method 8021B
3 Method 8015M

Bold and italicized values indicate exceedance of proposed Remediation RRALs and Reclamation Requirements.

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

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	NRM2026250365
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party ConocoPhillips	OGRID 217817
Contact Name Christopher Ebey	Contact Telephone + 575-391-3165
Contact email Christopher.ebey@conocophillips.com	Incident # *(assigned by OCD)*
Contact mailing address 1410 N West County Road Hobbs NM 88204	

Location of Release Source

Latitude 32.571111 Longitude -103.233889

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: SEMU Cass Penn	Site Type: Header/Flowline
Date Release Discovered: 09/11/2020	API# *(if applicable)* *Nearest Well* SEMU BTD #70, 30-025-06115

Unit Letter	Section	Township	Range	County
I	15	20S	37E	LEA

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: S-W Cattle Company*_____)

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) 6.2	Volume Recovered (bbls) 2
☒ Produced Water	Volume Released (bbls) .3	Volume Recovered (bbls) 0
	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

Pinhole leak developed between the test header and the separator causing a fluid release on the ground that did not leave location.

State of New Mexico
Oil Conservation Division

Incident ID	NRM2026250365
District RP	
Facility ID	
Application ID	

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? An authorized release of a volume, excluding gas, in excess of 25 bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Notice was made by Charles Beauvais, Environmental Coordinator, at 3:45PM, on 9/11/2020 via email to Bradford.billings@state.nm. Also, an online submittal with payment for submittals was made to NMOCD.

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: Christopher Ebey Title: HSE Specialist

Signature: Chris Ebey Date: 9/11/2020

email: Christopher.ebey@conocophillip.com Telephone: 575-391-3165

OCD Only

Received by: Ramona Marcus Date: 9/18/2020

NRM2026250365

L48 Spill Volume Estimate Form												
Facility Name & Number:	Semu Cass Penn											
Asset Area:	HPA 1											
Release Discovery Date & Time:	9/11/2020 10:00											
Release Type:	Oil Mixture											
Provide any known details about the event:												
Spill Calculation - On Pad Surface Pool Spill												
Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Deepest point in each of the areas (in.)	No. of boundaries of "shore" in each area	Estimated *Pool* Area (sq. ft.)	Estimated Average Depth (ft.)	Estimated volume of each pool area (bbl.)	Penetration allowance (ft.)	Total Estimated Volume of Spill (bbl.)	Percentage of Oil if Spilled Fluid is a Mixture	Total Estimated Volume of Spilled Oil (bbl.)	Total Estimated Volume of Spilled Liquid other than Oil (bbl.)
Rectangle A	45.0	78.0	0.50	4	3510.000	0.010	6.508	0.001	6.512	95.00%	6.186	0.326
Rectangle B					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle C					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle D					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle E					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle F					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle G					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle H					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle I					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle J					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
								Total Volume Release:	6.512		6.186	0.326

Incident ID	
District RP	
Facility ID	
Application ID	

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?	_____ (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	
District RP	
Facility ID	
Application ID	

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: ______________________________ Title: ______________________________

Signature: Rahul Kaushik ______________________________ Date: ____________

email: ______________________________ Telephone: ______________________________

OCD Only

Received by: ______________________________ Date: ______________

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☐ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature: Rachel Kendrick _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Chad Hensley _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX B
Site Characterization 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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 10150		L	LE		1	4	09	20S	37E	663842	3606715*	2516	46	30	16
L 05350		L	LE		2	1	13	20S	37E	668279	3605980*	2636	100		
L 10117		L	LE	1	1	2	13	20S	37E	668580	3606086*	2955	130	70	60

Average Depth to Water: **50 feet**

Minimum Depth: **30 feet**

Maximum Depth: **70 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 665787 **Northing (Y):** 3605118 **Radius:** 3000

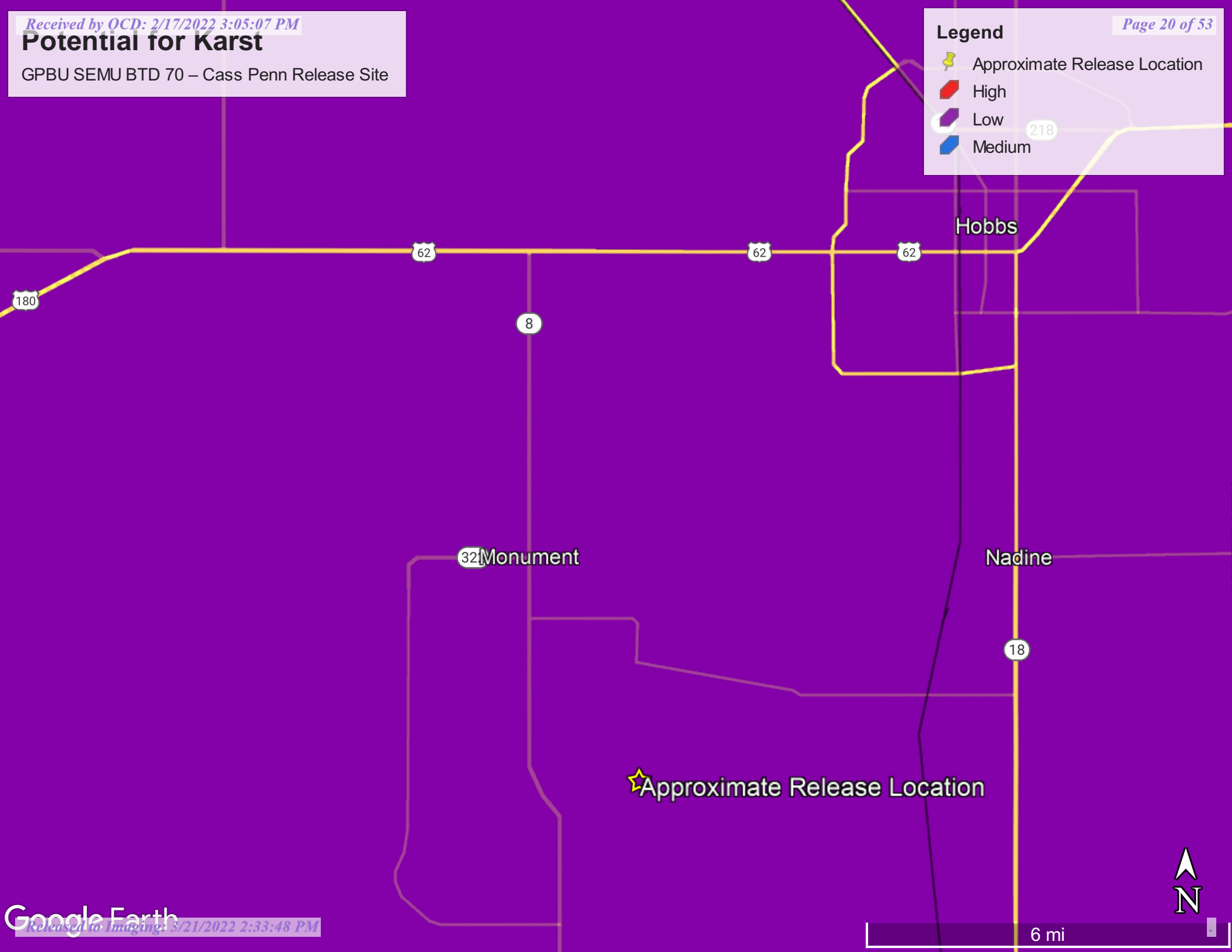
***UTM location was derived from PLSS - see Help**

1/30/22 11:30 AM

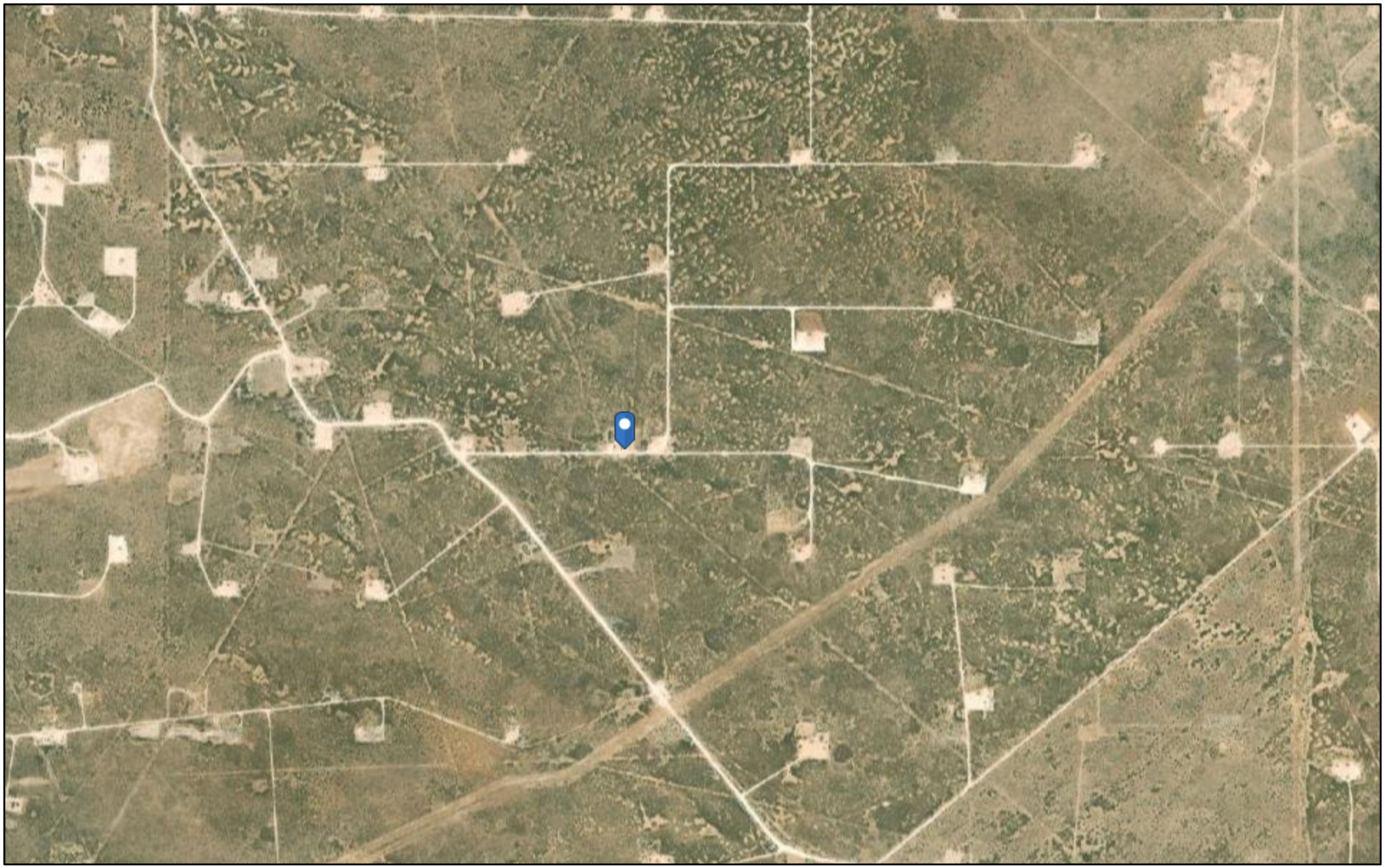
WATER COLUMN/ AVERAGE DEPTH TO WATER

Potential for Karst

GPBU SEMU BTD 70 – Cass Penn Release Site



NMOCD Water Bodies



1/30/2022, 12:40:24 PM

OCD District Offices

OSE Water-bodies

PLJV Probable Playas

OSE Streams

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

OCD, Maxar

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

212C-MD-01991 | TETRA TECH

LOG OF BORING BH-1

Page 1 of 2

Project Name: SEMU Eumont #84 Release

Borehole Location: GPS: 32.564599°, -103.232965° | Surface Elevation: 3535 ft

Borehole Number: BH-1 | Borehole Diameter (in.): 8 | Date Started: 11/14/2019 | Date Finished: 11/14/2019

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
				0.8								**-SM-** SILTY SAND: Brown, loose, with few gravel, no odor, no staining.		BH-1 (0-1')
				1.1										BH-1 (2-3')
5			137	1.1										BH-1 (4-5')
				1.2										BH-1 (6-7')
													8	
10			266	1								**-ML-** SILT: Tan, medium dense to dense, moderately cemented, with few gravel, no odor, no staining.		
15				0.9										
20			172	1.1										
25				0.6										

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-01991	TETRA TECH	**LOG OF BORING BH-1**	Page 2 of 2

Project Name: SEMU Eumont #84 Release

Borehole Location: GPS: 32.564599°, -103.232965° | Surface Elevation: 3535 ft

Borehole Number: BH-1 | Borehole Diameter (in.): 8 | Date Started: 11/14/2019 | Date Finished: 11/14/2019

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
													27	
												-SM- SILTY SAND: Brown, loose, with no odor, no staining.		
30			186	0.5									32	
												-SM- SILTY SAND: White, very dense, heavily cemented, with moderate gravel, no odor, no staining.		
35				0.8										
40			137	0.9									42	
												-GW- GRAVEL: White, very dense, with minimal fines, no odor, no staining.		
45				1.1									45	

Bottom of borehole at 45.0 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 C
Photographic Documentation

TETRA TECH, INC. PROJECT NO. 212C-MD-02682	DESCRIPTION	View of the release point and area (provided by client).	1
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	9/11/2020

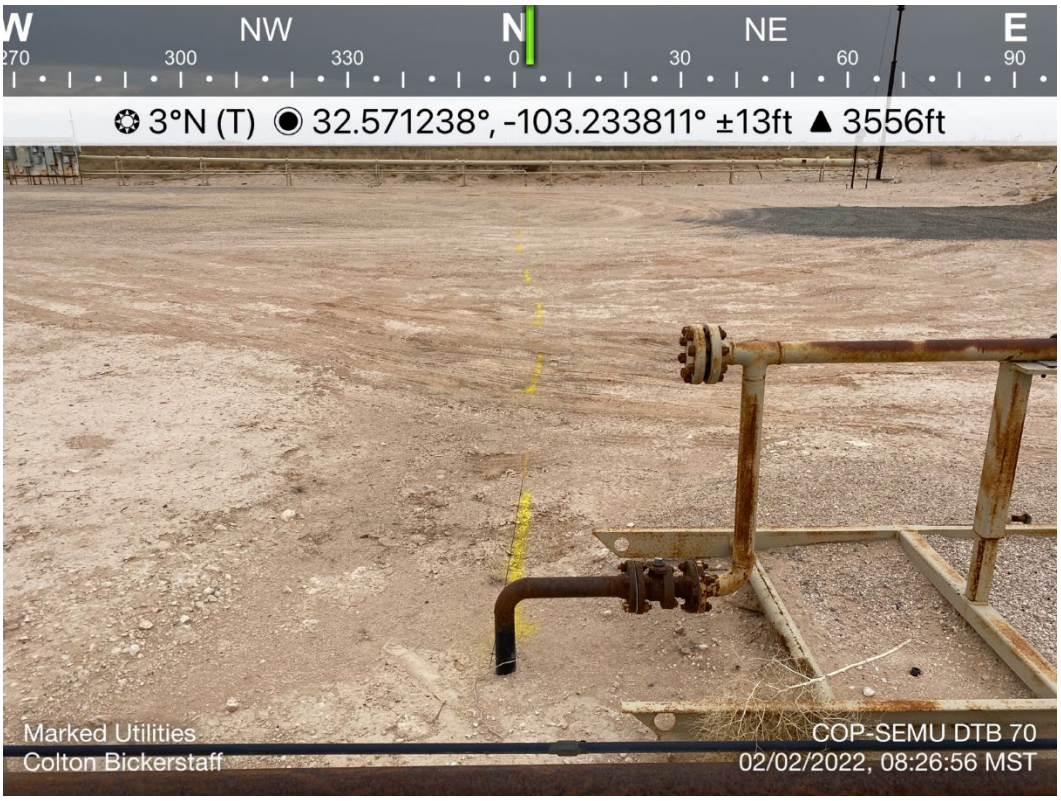
TETRA TECH, INC. PROJECT NO. 212C-MD-02682	DESCRIPTION	View of the release point and extent (provided by client).	2
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	9/11/2020

TETRA TECH, INC. PROJECT NO. 212C-MD-02682	DESCRIPTION	View of the release point and extent (provided by client).	3
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	9/11/2020

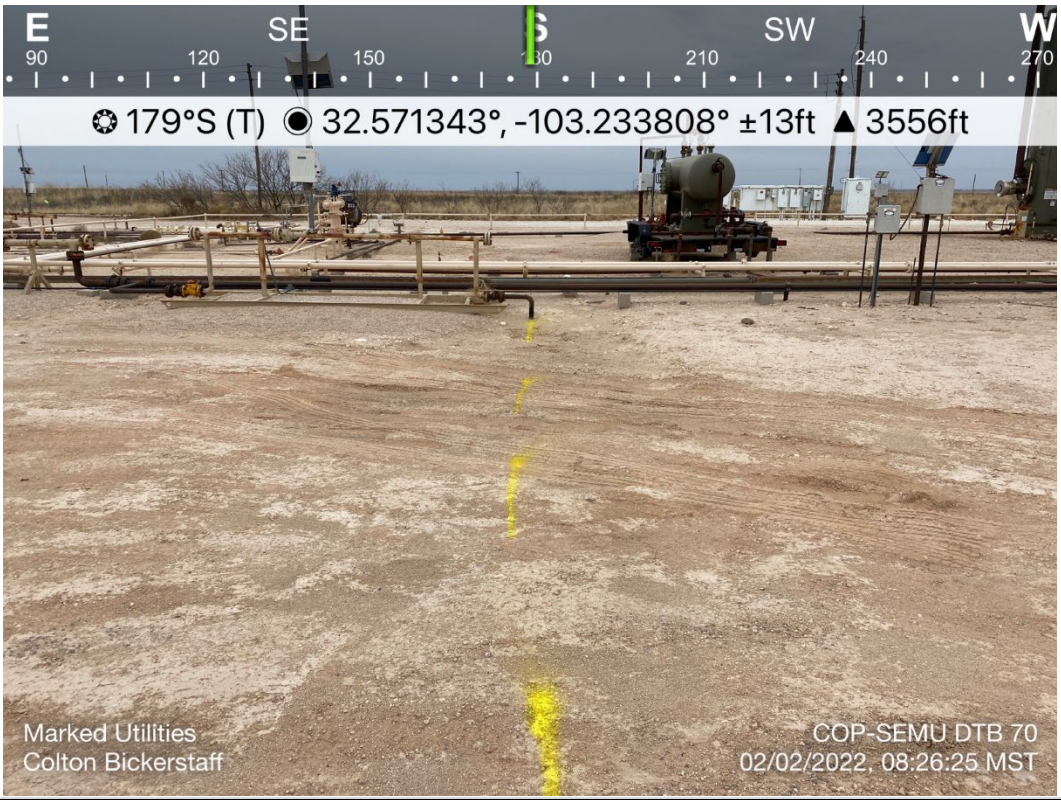
TETRA TECH, INC. PROJECT NO. 212C-MD-02682	DESCRIPTION	View of the release point and extent (provided by client).	4
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	9/11/2020

TETRA TECH, INC. PROJECT NO. 212C-MD-02682	DESCRIPTION	View of the release point and extent (provided by client).	5
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	9/11/2020

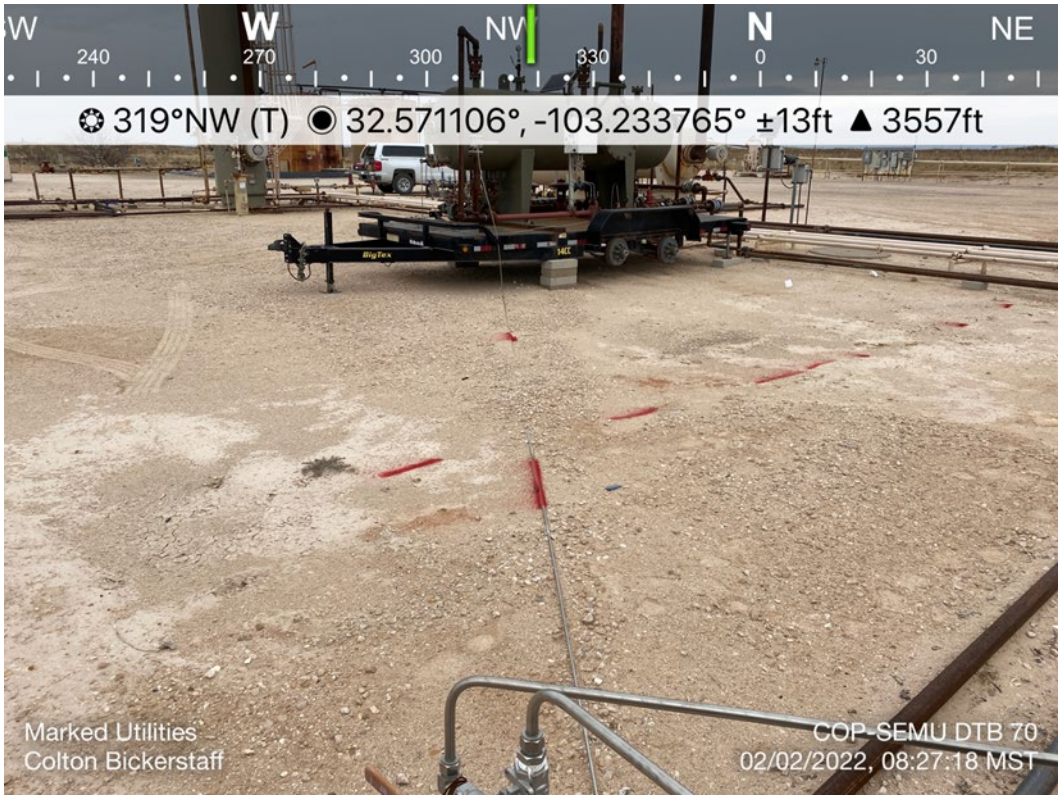
TETRA TECH, INC. PROJECT NO. 212C-MD-02682	DESCRIPTION	View of the release point and extent (provided by client).	6
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	9/11/2020



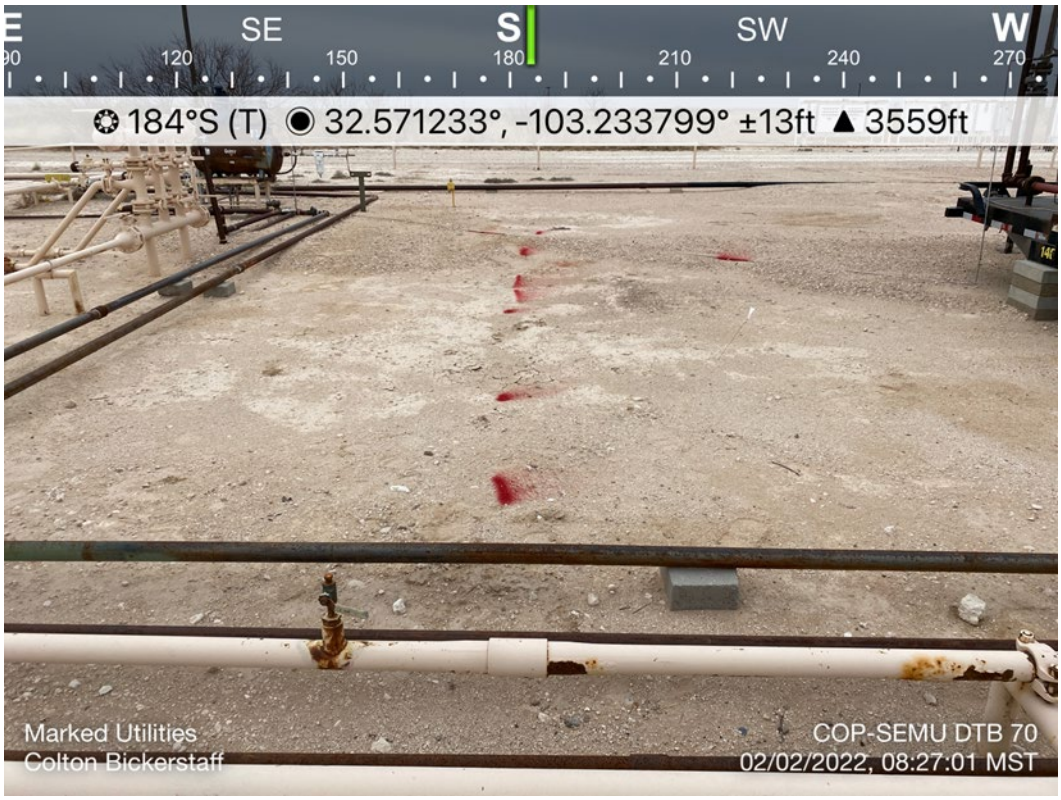
TETRA TECH, INC. PROJECT NO. 212C-MD-02862	DESCRIPTION	View north of the former release area footprint.	7
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	2/02/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02862	DESCRIPTION	View south of the former release area footprint.	8
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	2/02/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02862	DESCRIPTION	View northwest of the former release area footprint.	9
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	2/02/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02862	DESCRIPTION	View south of the former release area footprint.	10
	SITE NAME	ConocoPhillips SEMU Cass Penn (SEMU BTD #70) Flowline Release	2/02/2022

APPENDIX D
Laboratory Analytical Data

CARDINAL Laboratories

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

February 04, 2022

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU BTD 70- CASS PENN

Enclosed are the results of analyses for samples received by the laboratory on 02/02/22 11:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. 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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 1 (0-1') (H220391-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *85.4 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *85.4 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 1 (1'-2') (H220391-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	**15.4**	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *86.1 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *88.4 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 2 (0-1') (H220391-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *93.6 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *94.6 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 2 (1'-2') (H220391-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *69.9-140*

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	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *96.5 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *96.7 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 3 (0-1') (H220391-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *69.9-140*

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	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *95.6 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *95.9 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 3 (1'-2') (H220391-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *69.9-140*

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	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *91.4 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *91.7 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 4 (0-1') (H220391-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *70.5 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *70.1 %* *59.5-142*

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:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 4 (1'-2') (H220391-08)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *69.9-140*

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	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *78.5 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *77.9 %* *59.5-142*

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Analytical Results For:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 5 (0-1') (H220391-09)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *69.9-140*

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	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	**26.5**	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	**20.0**	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *87.8 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *89.8 %* *59.5-142*

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Analytical Results For:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 5 (2'-3') (H220391-10)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	**170**	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	**149**	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *83.1 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *86.8 %* *59.5-142*

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Analytical Results For:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 5 (4'-5') (H220391-11)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/04/2022	ND	204	102	200	5.27	
DRO >C10-C28*	**20.1**	10.0	02/04/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	**16.7**	10.0	02/04/2022	ND					

Surrogate: 1-Chlorooctane *90.5 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *93.2 %* *59.5-142*

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Analytical Results For:

TETRA TECH
CHRISTIAN LLULL
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	02/02/2022	Sampling Date:	02/02/2022
Reported:	02/04/2022	Sampling Type:	Soil
Project Name:	SEMU BTD 70- CASS PENN	Sampling Condition:	** (See Notes)
Project Number:	212C - MD - 02682	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

Sample ID: AH - 5 (7'-8') (H220391-12)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2022	ND	1.95	97.7	2.00	4.97	
Toluene*	<0.050	0.050	02/03/2022	ND	2.08	104	2.00	0.518	
Ethylbenzene*	<0.050	0.050	02/03/2022	ND	1.92	96.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	02/03/2022	ND	5.96	99.4	6.00	0.695	
Total BTEX	<0.300	0.300	02/03/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *69.9-140*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	02/03/2022	ND	416	104	400	3.92	

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	02/03/2022	ND	204	102	200	5.27	
DRO >C10-C28*	<10.0	10.0	02/03/2022	ND	220	110	200	5.25	
EXT DRO >C28-C36	<10.0	10.0	02/03/2022	ND					

Surrogate: 1-Chlorooctane *85.5 %* *66.9-136*

Surrogate: 1-Chlorooctadecane *86.5 %* *59.5-142*

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Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1/2

Company Name: Conoco Phillips
Project Manager: Christian Llull
Address: Christian.Llull@tetratech.com
City: State: Zip:
Phone #: Fax #:
Project #: 212C-MD-02682 Project Owner:
Project Name: SEMU BTO 70 - Cass Pen
Project Location: Lea County, NM
Sampler Name: Colton Bickerstaff

BILL TO

P.O. #:
Company: Tetra Tech
Attn: Christian Llull
Address: by email
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	BTEX	TPH	Chlorides
H220391																	
1	AH-1 (0-1')	G	1			X							2/2/22		X	X	X
2	AH-1 (1'-2')																
3	AH-2 (0-1')																
4	AH-2 (1'-2')																
5	AH-3 (0-1')																
6	AH-3 (1'-2')																
7	AH-4 (0-1')																
8	AH-4 (1'-2')																
9	AH-5 (0-1')																
10	AH-5 [redacted] (2'-3')																

Relinquished By: Colton Bickerstaff Date: 2/2/22 Time: 1145
Received By: Jamara Oldaker
Relinquished By: Date: Time:
Received By:

Verbal Result: ☐ Yes ☑ No Add'l Phone #:
All Results are emailed. Please provide Email address:
christian.llull@tetratech.com
REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:
Observed Temp. °C 8.3
Corrected Temp. °C 7.8
Sample Condition: Cool ☐ Yes ☑ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials) T.O.

Turnaround Time: Standard ☑ Rush ☐
Thermometer ID #113
Correction Factor -0.5°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2/2

Company Name:	ConocoPhillips
Project Manager:	Christian Llull
Address:	Christian.Llull@tetratech.com
City:	State: Zip:
Phone #:	Fax #:
Project #:	212C-MD-02682 Project Owner:
Project Name:	SEMU BTD 70 - Cass Pem
Project Location:	Lea County, NM
Sampler Name:	Colton Bickerstaff

BILL TO

P.O. #:	
Company:	Tetra Tech
Attn:	Christian Llull
Address:	by email
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	SAMPLING TIME	BTEX	TPH	Chlorides
H220391																	
11	AH-5 (4'-5')	G	1			X							2/2/22		X	X	X
12	AH-5 (7'-8')	G	1			X							2/2/22		X	X	X

Relinquished By:	Date: 2/2/22	Received By:	
Colton Bickerstaff	Time: 1145	Tamara Oldaker	
Relinquished By:	Date:	Received By:	
	Time:		

Verbal Result: ☐ Yes ☑ No Add'l Phone #:
All Results are emailed. Please provide Email address:
christian.llull@tetratech.com
REMARKS:

Delivered By: (Circle One)	Observed Temp. °C 8.3	Sample Condition Cool: ☐ Yes ☑ No	Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TO.
Sampler - UPS - Bus - Other:	Corrected Temp. °C 7.8			

Turnaround Time: Standard ☑ Rush ☐
Thermometer ID #113
Correction Factor -0.5°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

APPENDIX E
Soil Boring Logs

212C-MD-02682	TETRA TECH	LOG OF BORING AH-1	Page 1 of 1

Project Name: SEMU BTD 70

Borehole Location: GPS: 32.571223°, -103.234045° | Surface Elevation: 3553 ft

Borehole Number: AH-1 | Borehole Diameter (in.): | Date Started: 2/2/2022 | Date Finished: 2/2/2022

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
												-- CALICHE: Pale brown, dry, weakly cemented, fine grained	1	
												-SM- SILTY SAND, brown, dry, very fine to fine grained, with Caliche particles	2	

Bottom of borehole at 2.0 feet.

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

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

Notes:

Logger: Colton Bickerstaff | Drilling Equipment: Hand Auger | Driller: Tetra Tech

SEMU BTD 70.GPJ ` 2-9-22 ` TT_AUSTIN_GEOTECH_NOWELL3 ` 2015 TT TEMPLATE DECEMBER WELL.GDT ' ` Revised 5-16-12 (RHM)

212C-MD-02682	TETRA TECH	**LOG OF BORING AH-2**	Page 1 of 1

Project Name: SEMU BTD 70

Borehole Location: GPS: 32.571346°, -103.233803° | Surface Elevation: 3554 ft

Borehole Number: AH-2 | Borehole Diameter (in.): | Date Started: 2/2/2022 | Date Finished: 2/2/2022

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
												-- CALICHE: brown, dry, fine grained, with pockets of fine grained Sand	1	
												-SM- SILTY SAND, brown, dry, very fine grained	2	

Bottom of borehole at 2.0 feet.

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

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

Notes:

Logger: Colton Bickerstaff | Drilling Equipment: Hand Auger | Driller: Tetra Tech

212C-MD-02682	TETRA TECH	**LOG OF BORING AH-3**	Page 1 of 1

Project Name: SEMU BTD 70

Borehole Location: GPS: 32.571175°, -103.233435° | Surface Elevation: 3553 ft

Borehole Number: AH-3 | Borehole Diameter (in.): | Date Started: 2/2/2022 | Date Finished: 2/2/2022

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
												-SM- SILTY SAND, brown, dry, fine to very fine grained	2	

Bottom of borehole at 2.0 feet.

Sampler Types: Split Spoon; Acetate Liner; Shelby; Vane Shear; Bulk Sample; Discrete Sample; Grab Sample; Test Pit

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

Notes:

Logger: Colton Bickerstaff | Drilling Equipment: Hand Auger | Driller: Tetra Tech

212C-MD-02682	TETRA TECH	LOG OF BORING AH-4	Page 1 of 1

Project Name: SEMU BTD 70

Borehole Location: GPS: 32.570927°, -103.233763° | Surface Elevation: 3553 ft

Borehole Number: AH-4 | Borehole Diameter (in.): | Date Started: 2/2/2022 | Date Finished: 2/2/2022

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
												-SM- SILTY SAND, brown, dry, fine to very fine grained, with Caliche particles	2	

Bottom of borehole at 2.0 feet.

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

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

Notes:

Logger: Colton Bickerstaff | Drilling Equipment: Hand Auger | Driller: Tetra Tech

212C-MD-02682 | TETRA TECH | **LOG OF BORING AH-5** | Page 1 of 1

Project Name: SEMU BTD 70

Borehole Location: GPS: 32.571171°, -103.233816° | Surface Elevation: 3553 ft

Borehole Number: AH-5 | Borehole Diameter (in.): | Date Started: 2/2/2022 | Date Finished: 2/2/2022

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
												-- CALICHE, brown, dry, fine grained, with pockets of fine grained Sand	1	
												-SM- SILTY SAND, brown, dry, fine to very fine grained	3	
												-CL- SANDY LEAN CLAY, brown, slightly moist	5	
5												**-SC-** CLAYEY SAND, pale brown, slightly moist, fine grained, with Caliche		
													8	

Bottom of borehole at 8.0 feet.

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

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

Notes:

Logger: Colton Bickerstaff | Drilling Equipment: Hand Auger | Driller: Tetra Tech

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 82474

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 82474
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	3/21/2022