TETRA TECH

October 22, 2021

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

Re: Release Characterization and Remediation Work Plan
ConocoPhillips (Heritage Concho)
Sopapilla State 2D CTB Flex Line Release
Unit Letter M, Section 15, Township 23 South, Range 33 East
Lea County, New Mexico
Incident ID: NAPP2115525504

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips Company (COP) to evaluate a release that occurred along a flex line associated with the Sopapilla State 2D Central Tank Battery (CTB), Unit Letter M, Section 15, Township 23 South, Range 33 East, in Lea County, New Mexico (Site). The approximate release Site coordinates are 32.29802°, -103.56710°. The Site location is shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico C-141 Initial Report, the release was discovered on May 25, 2021, and approximately 10 barrels (bbls) of crude oil was reported to have been released due to damage caused by internal corrosion within a flex line. This release reportedly occurred in the pasture along the flex line connected to the Sopapilla CTB, and eventually flowed south onto the adjacent lease road. Based upon the reported spill calculator form, the release impacted approximately 552 square feet (sq ft) of surface area. Vacuum trucks were dispatched to remove the freestanding fluids; however, no fluids were reported recovered. The C-141 Form is included in Appendix A.

New Mexico Oil Conservation Division (NMOCD) was notified of the release on June 4, 2021. NMOCD received the initial C-141 on June 6, 2021, and subsequently assigned the release the Incident ID NAPP2115525504. An extension request was filed with the NMOCD on August 24, 2021 for an additional 30 days following the initial 90 days. The extension request was approved by the NMOCD on August 26, 2021. The email correspondence from the NMOCD regarding the extension is found in Appendix B.

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 19.15.0029 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 were no water wells within 800 meters (approximately ½ mile) radius of the Site. The radius search was expanded to 1600 meters and 2400 meters of the Site with similar results. Expanding the search radius to 3200 meters, four (4) water wells were present with the average depth to ground water at 400 feet (ft) below ground surface (bgs). The site characterization data is included in Appendix C.

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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 a well further than ½ mile away from the Site and the data was more than 25 years old, COP elected to drill a boring to depth for groundwater verification. On August 31, 2021, a licensed well drilling subcontractor was onsite to a drill a groundwater determination borehole to 55 feet bgs. The borehole was located within a ½-mile radius of the release footprint. The borehole was dry upon completion, and soils were dry from surface to total depth. The depth to groundwater in the area was thus verified as greater than 55 feet bgs. The borehole was plugged with 3/8-inch bentonite chips on August 31, 2021. The borehole coordinates are 32.298042°, -103.567104° and the boring location is indicated on Figure 3. The boring log (BH-2) is included in Appendix D.

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 (GRO+DRO+ORO)	2,500 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

Additionally, in accordance with the NMOCD guidance *Procedures for Implementation of the Spill Rule (19.15.29 NMAC)* (September 6, 2019), the following reclamation requirements for surface soils (0-4 feet bgs) outside of active oil and gas operations are as follows:

Constituent	Reclamation Requirements
Chloride	600 mg/kg
TPH (GRO+DRO+ORO)	100 mg/kg

SITE ASSESSMENT AND DELINEATION

The approximate release extent is shown in Figure 3. In order to properly characterize the release footprint and achieve horizontal and vertical delineation of the release extent, Tetra Tech personnel conducted soil sampling on June 25, 2021. A total of ten (10) auger holes were installed within and outside the area in the vicinity of the reported release footprint. Four (4) auger holes (AH-1 through AH-4) were installed inside the release area to achieve vertical delineation. Six (6) auger holes (H-1 through H-6) were installed along the perimeter of the estimated release extent to achieve horizontal delineation. Soil samples collected were field screened for salinity parts per million (ppm) using an ExStik II EC 400 meter. Hand auger hole locations are shown on Figure 3.

A total of twenty-two (22) samples were collected from the ten (10) augur holes and submitted to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico to be analyzed for chlorides via EPA Method 4500.0, TPH via EPA Method 8015M, and BTEX via EPA Method 8021B. Copies of the analytical laboratory reports and chain-of-custody documentation are included in Appendix E. Photographic documentation of the release area is included in Appendix F.

SUMMARY OF SAMPLING RESULTS

Results from the June 2021 soil sampling event are summarized in Table 1. Analytical results associated with the sample locations AH-3 and AH-4 exceeded reclamation RRALs for chlorides (600 mg/kg) in the upper 4 feet. Analytical results associated with AH-3 exceeded the reclamation RRALs for TPH (100 mg/kg) in the 0-1 foot bgs interval. Analytical results from soil sample below four feet in AH-3 and AH-4 did not exceed the proposed remediation RRALs for chloride of 10,000 mg/kg.

There were no other analytical results from samples collected in June 2021 which exceeded the Site RRALs for TPH, chlorides, or BTEX in the perimeter or the interior boring locations. The analytical results associated with the remainder of the samples analyzed were below the Site remediation and reclamation RRALs for all constituents. However, after review of the analytical results from the sampling events, additional delineation was required following the June 2021 soil assessment activities.

ADDITIONAL DELINEATION

After review of the collected analytical data, Tetra Tech performed additional sampling using an air rotary drilling rig to achieve delineation of impacted soils within the release extent, in the vicinity of previously sampled locations AH-3, AH-4, and H-3. This delineation was intended to assist in the overall release characterization in accordance with 19.15.29.12 NMAC.

On August 31, 2021 Tetra Tech personnel returned to the Site to complete three (3) soil borings (BH-1 through BH-3) using an air rotary drilling rig, to delineate and clarify the release extent both horizontally and vertically. A total of sixteen (16) samples were collected from the three (3) borings and submitted to Eurofins-Xenco to be analyzed for TPH, BTEX, and chloride. Results from the September 2021 soil sampling event are summarized in Table 2. Additional boring locations are indicated in Figure 3. Boring logs, included as Appendix D, present soil descriptions, sample depths and field screening data from the additional Site assessment. Copies of the analytical laboratory reports and chain-of-custody documentation are included in Appendix E.

SUMMARY OF ADDITIONAL DELINEATION

The analytical results associated with BH-1 boring location exceeded the Site reclamation RRAL for chlorides (600 mg/kg) in the 0-1 foot bgs interval. Analytical results associated with BH-2 exceeded the reclamation RRAL for TPH (100 mg/kg) in the 0-1 foot bgs interval.

There were no other analytical results from samples collected in August 2021 which exceeded the Site RRALs for TPH, chlorides, or BTEX in the perimeter or the interior boring locations. The analytical results associated with the remainder of the samples analyzed were below the Site remediation and reclamation RRALs for all constituents. After review of the analytical results from the sampling events, both horizontal and vertical delineation was achieved following the August 2021 soil assessment activities.

INITIAL DEFERRAL REQUEST

A Release Characterization and Deferral Request was prepared by Tetra Tech on behalf of COP and submitted to the NMOCD on September 23, 2021. The report described the assessment activities and results. The deferral request was rejected by Chad Hensley of the NMOCD via email on October 14, 2021. Reasons for rejection included in the email were:

- *"Deferral is not eligible for off-pad release.*
- *Remediation plan due 11/25/2021."*

REMEDIATION WORK PLAN

Thus, based on the analytical results from the additional assessment, COP proposes to remove the impacted material within the release extent as shown in Figure 4. Impacted soils will be excavated using heavy equipment (backhoes, hoe rams, and track hoes) to a maximum depth of 4 feet below the surrounding surface or until a representative sample from the walls and bottom of the excavation is below the Site RRALs. Heavy equipment will come no more than 3 feet from any pressurized lines. Impacted soils within the vicinity of the surface and subsurface lines which intersect the release footprint will be dug by hand to the maximum extent practicable.

Excavated soils will be transported offsite and disposed of at an NMOCD-approved or permitted facility. Confirmation bottom and sidewall samples will be collected for verification of remedial activities, and analyzed for TPH, BTEX, and chlorides. Once analytical 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 approximately 230 cubic yards.

ALTERNATIVE CONFIRMATION SAMPLING PLAN

In accordance with 19.15.29.12(D)(1)(b) NMAC, COP proposes the following alternative confirmation sampling plan to adhere with NMOCD requirements. The proposed confirmation sample locations are depicted in Figure 5. Four (4) confirmation floor samples and ten (10) confirmation sidewall samples are proposed for verification of remedial activities. The proposed excavation encompasses a surface area of approximately 1,560 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 an accredited laboratory for analysis of TPH (Method 8015 modified), BTEX (Method 8260B), and chloride (USEPA Method 300.0). Once results are received, NMOCD will be notified, and the excavation will then be backfilled with clean material to surface grade.

SITE RECLAMATION AND RESTORATION PLAN

Post-remediation, any off-lease pasture areas will be backfilled and seeded (in the next first favorable growing season) to aid in revegetation. Based on the soils at the Site, the New Mexico State Land Office (NMSLO) Sandy (S) Sites Seed Mixture will be used for seeding and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the Site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the Site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix G. Final reclamation will create a landform that approximates and blends in with the surrounding landform, while controlling erosion.

CONCLUSION

ConocoPhillips proposes to begin remediation activities at the Site within 120 days of NMOCD plan approval. 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.

Sincerely,
Tetra Tech, Inc.

Christian M. Llull, P.G.
Program Manager

cc:
Ms. Kelsy Waggaman, GPBU – ConocoPhillips
Mr. Luke Alejandro, GPBU – ConocoPhillips

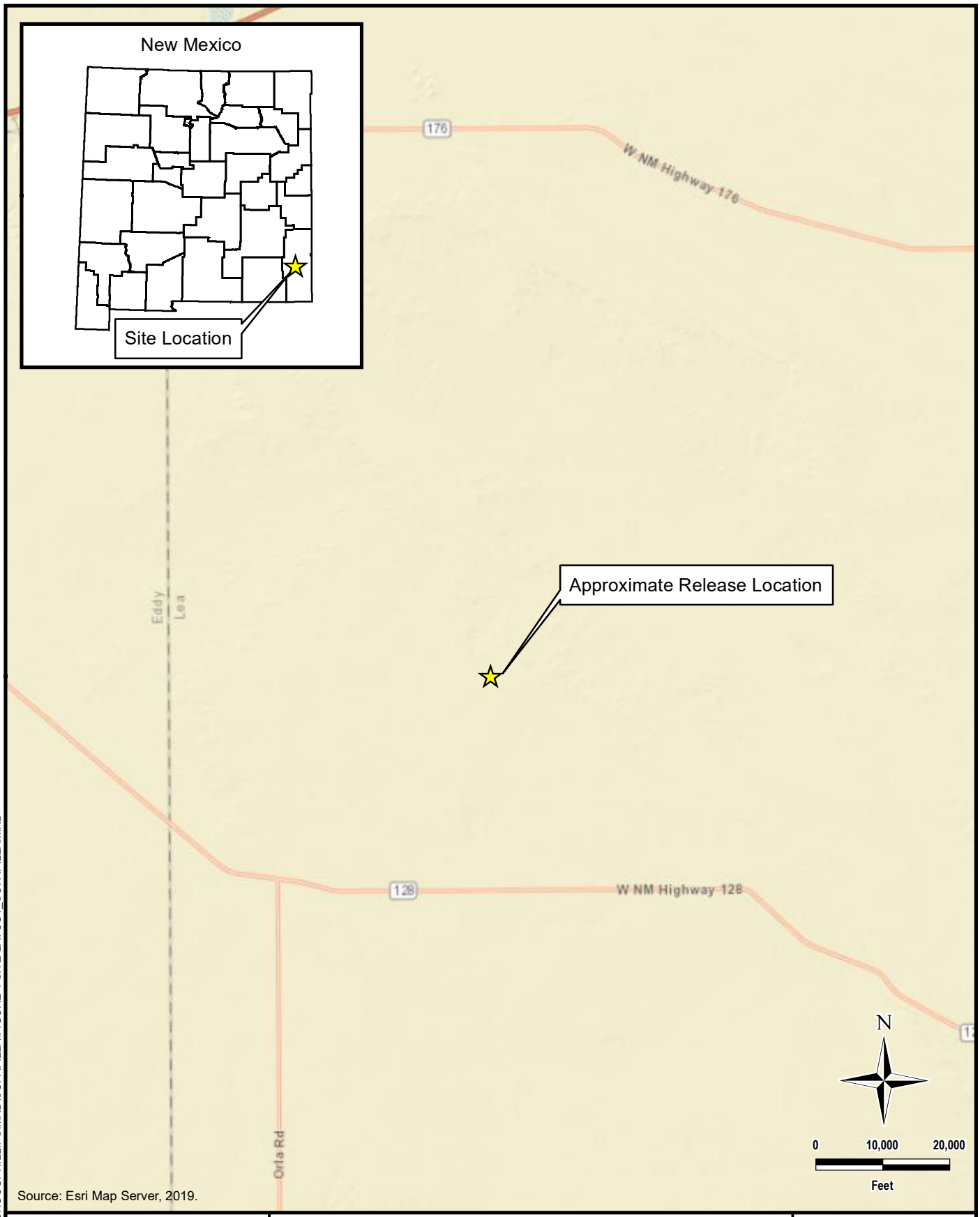
LIST OF ATTACHMENTS

Figures:

Tables:

Appendices:

FIGURES



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\SOPAPILLA\FIGURE 1 SITE LAYOUT_SOPAPILLA.MXD

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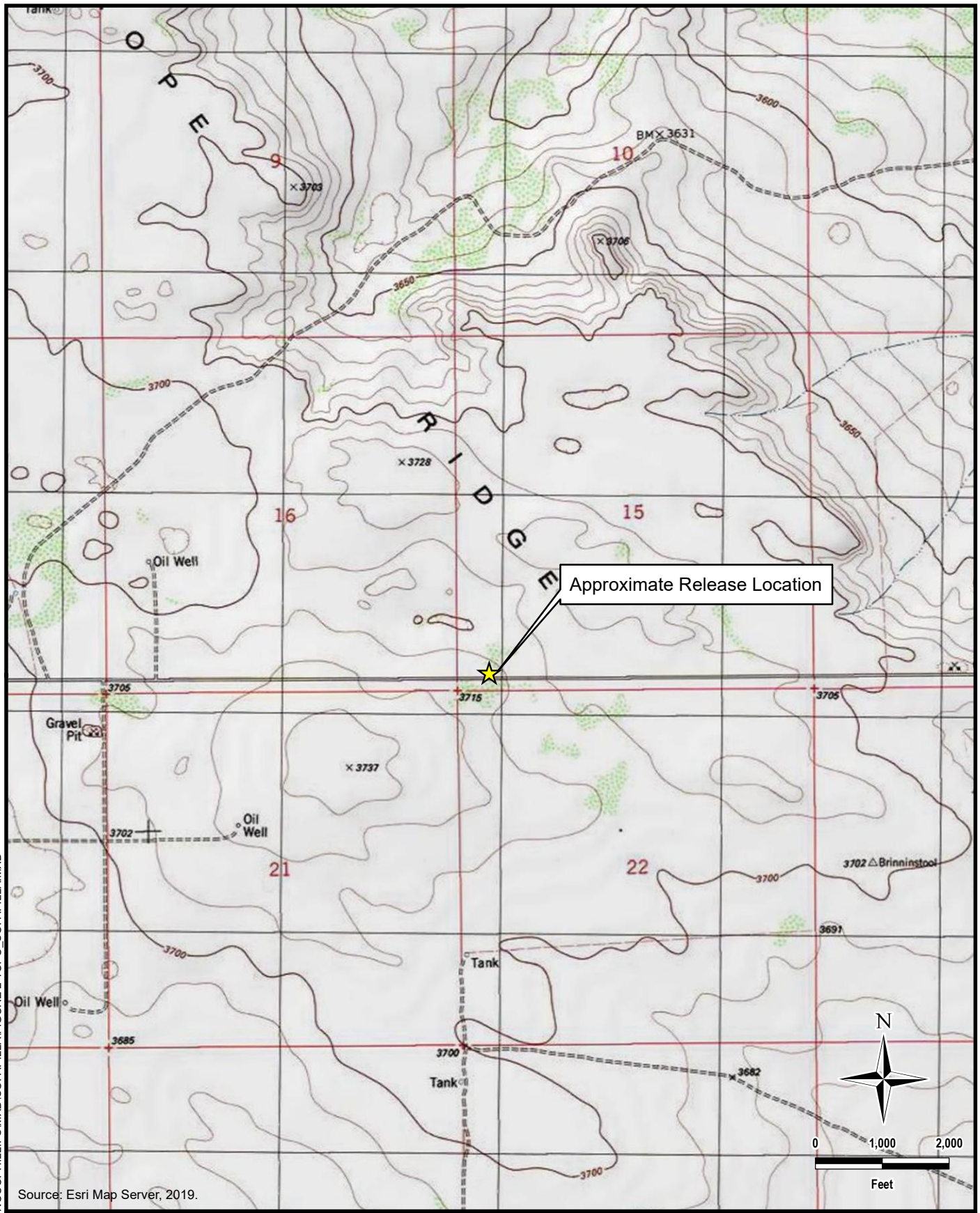
CONOCOPHILLIPS (HERITAGE CONCHO)

NAPP2115525504
(32.298097°, -103.567112°)
LEA COUNTY, NEW MEXICO

SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
OVERVIEW MAP

PROJECT NO.:	212C-MD-02532A
DATE:	SEPTEMBER 23, 2021
DESIGNED BY:	AAM

Figure No.
1



Source: Esri Map Server, 2019.

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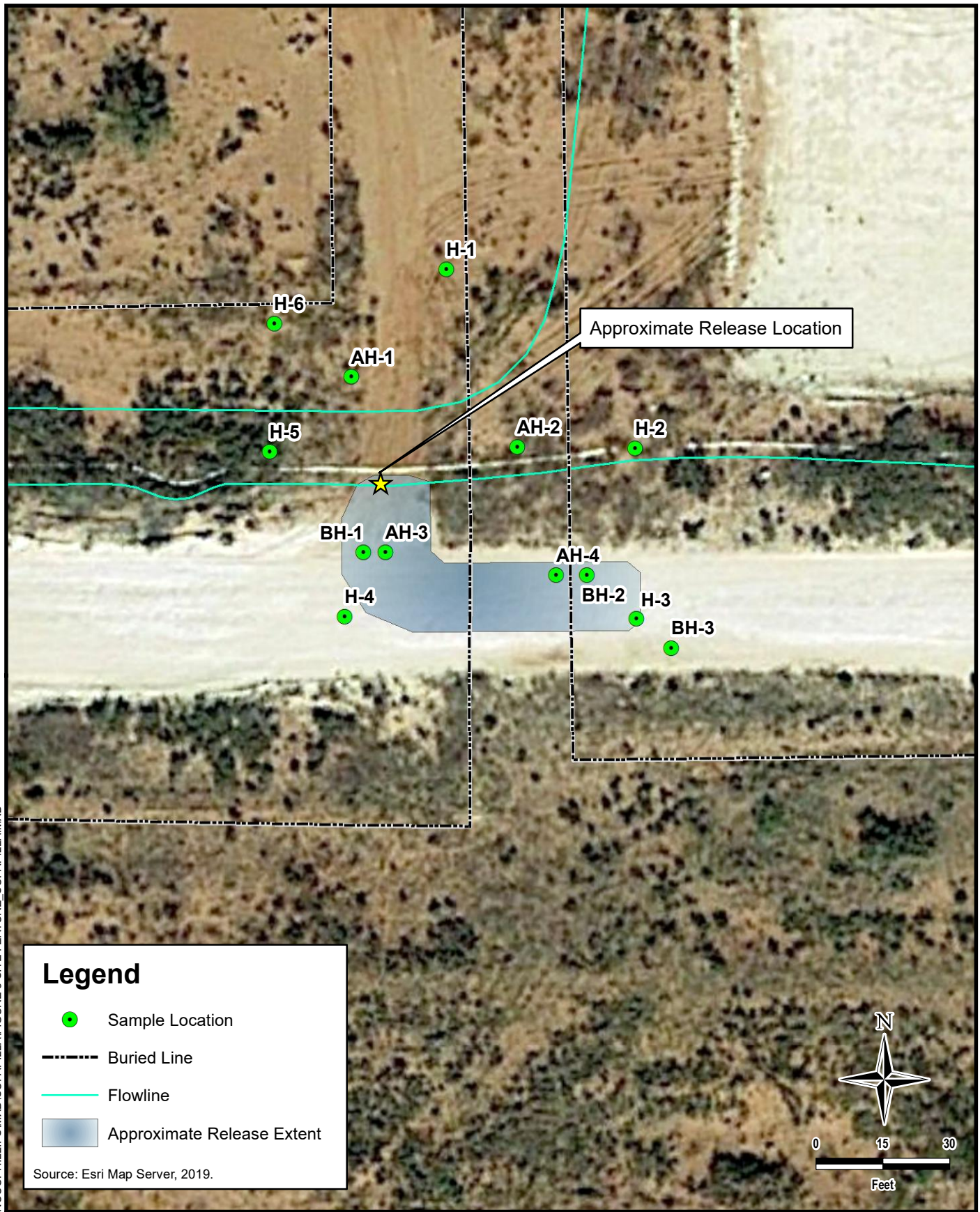
SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-02532A
DATE:	SEPTEMBER 23, 2021
DESIGNED BY:	AAM

Figure No.
2



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\SOPAPILLA\FIGURE 3 SITE FEATURE_SOPAPILLA.MXD

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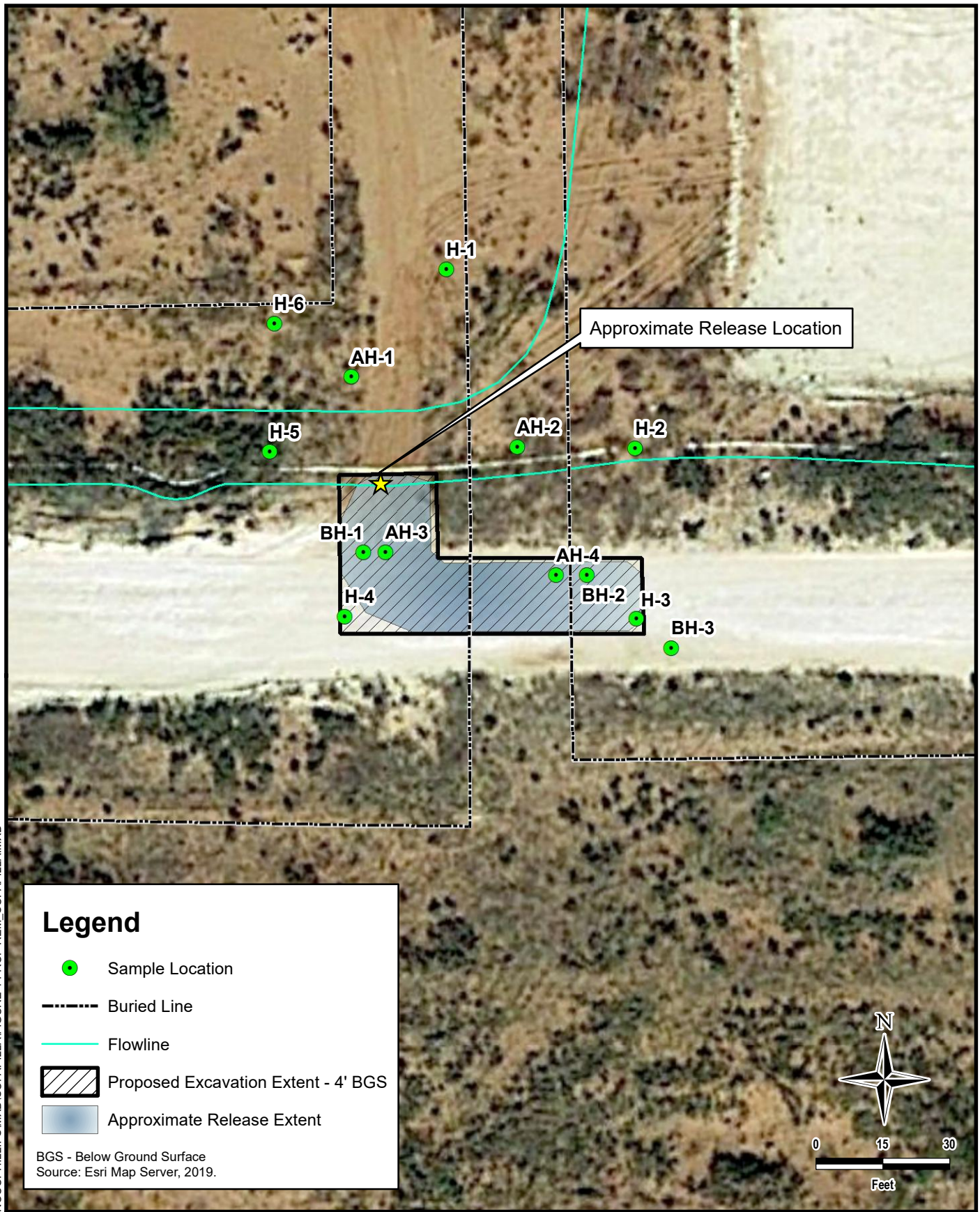
LEA COUNTY, NEW MEXICO

SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
APPROXIMATE RELEASE EXTENT AND ASSESSMENT

PROJECT NO.:	212C-MD-02532A
DATE:	SEPTEMBER 23, 2021
DESIGNED BY:	AAM

Figure No.
3



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NAPP2115525504
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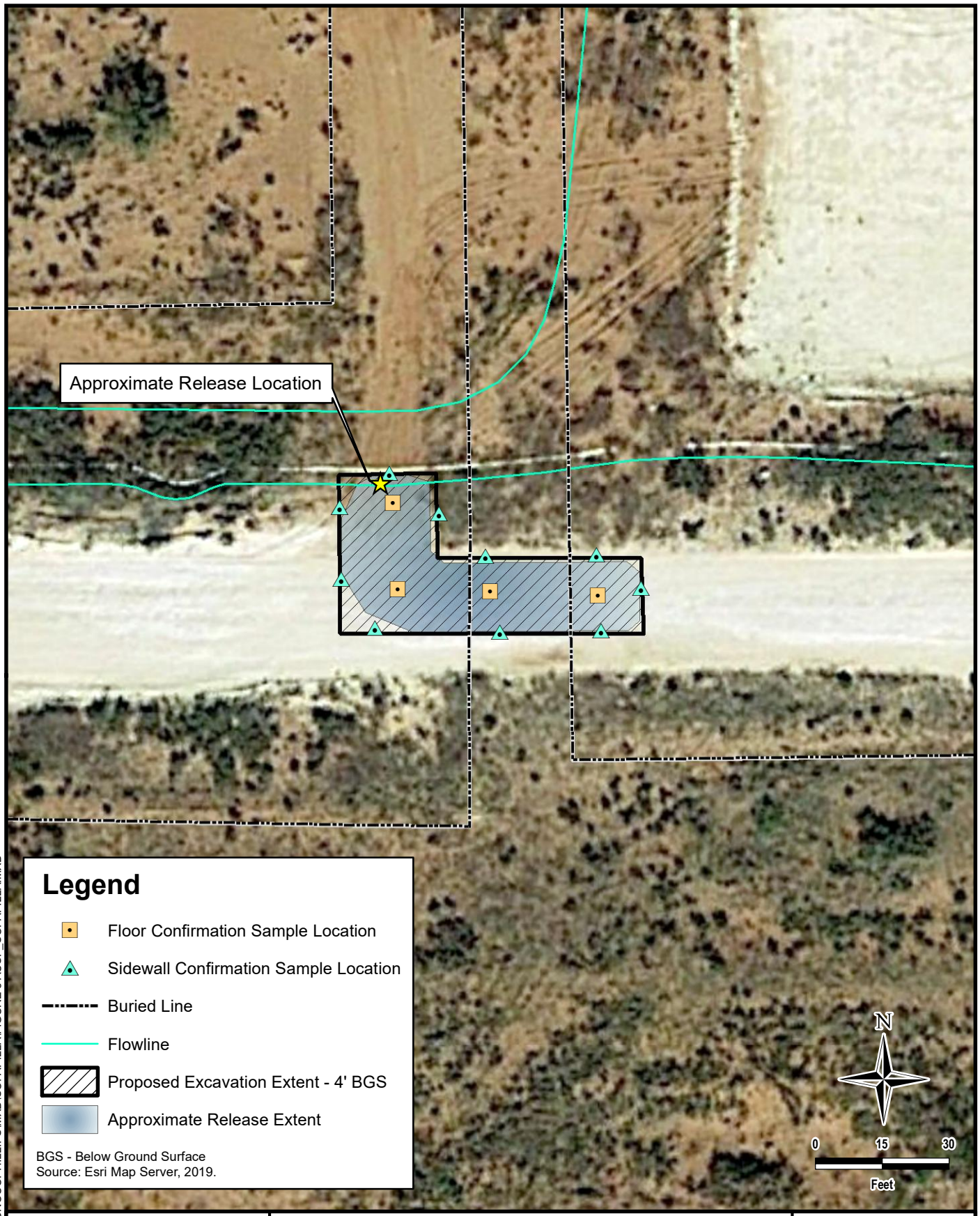
LEA COUNTY, NEW MEXICO

SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
PROPOSED REMEDIATION EXTENT

PROJECT NO.:	212C-MD-02532A
DATE:	OCTOBER 20, 2021
DESIGNED BY:	AAM

Figure No.
4



DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\SOPAPILLA\FIGURE 5 ACSP_SOPAPILLA.MXD

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(32.298097°, -103.567112°)
LEA COUNTY, NEW MEXICO

SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
ALTERNATIVE CONFIRMATION SAMPLING PLAN

PROJECT NO.:	212C-MD-02532A
DATE:	OCTOBER 20, 2021
DESIGNED BY:	AAM

Figure No.
5

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
SOIL ASSESSMENT- NAPP2115525504
HERITAGE CONCHO
SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth Interval	Field Screening Results		Chloride[1]		BTEX[2]										TPH[3]							
			Chloride	PID			Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH	
																	C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}			
		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	Q
AH-1	6/25/2021	0 - 1	-	-	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		1 - 1.5	-	-	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		2 - 2.5	-	-	64		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		3 - 3.5	-	-	64		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
AH-2	6/25/2021	0 - 1	-	-	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		1 - 1.5	-	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
AH-3	6/25/2021	0 - 1	-	-	***2600***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		1 - 1.5	-	-	***4960***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		2 - 2.5	-	-	***3280***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		3 - 3.5	-	-	***4960***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		4 - 4.5	-	-	7600		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
AH-4	6/25/2021	0 - 1	-	-	***3600***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		25.9		<10.0		25.9	
		1 - 1.5	-	-	***3280***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		2 - 2.5	-	-	***1540***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		3 - 3.5	-	-	***2680***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
		4 - 4.5	-	-	6880		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
H-1	6/25/2021	0 - 1	-	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
H-2	6/25/2021	0 - 1	-	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
H-3	6/25/2021	0 - 1	-	-	208		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		69.7		40.3		***110***	
H-4	6/25/2021	0 - 1	-	-	80		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
H-5	6/25/2021	0 - 1	-	-	336		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	
H-6	6/25/2021	0 - 1	-	-	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		<10.0	

NOTES:

ft.	Feet
bgs	Below ground surface
ppm	Parts per million
mg/kg	Milligrams per kilogram
TPH	Total Petroleum Hydrocarbons
GRO	Gasoline range organics
DRO	Diesel range organics
ORO	Oil range organics
1	EPA Method 300.0
2	EPA Method 8021B
3	EPA Method 8015B NM

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

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

*1 LCS/LCSD RPD exceeds control limits.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
ADDITIONAL SOIL ASSESSMENT- NAPP2115525504
HERITAGE CONCHO
SOPAPILLA STATE 2D CTB FLEX LINE RELEASE
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth Interval	Field Screening Results		Chloride[1]		BTEX[2]										TPH[3]									
							Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH			
																	C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}					
		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	Q		
BH-1	8/31/2021	0 - 1	-	-	***615***		< 0.00199		< 0.00199		< 0.00199		< 0.00398		0.00398		< 49.9		< 49.9	*1	< 49.9		< 49.9			
		2 - 3	620	-	280		< 0.00200		< 0.00200		< 0.00200		< 0.00399		0.00399		< 49.8		< 49.8	*1	< 49.8		< 49.8			
		4 - 5	948	-	884		< 0.00198		< 0.00198		< 0.00198		< 0.00397		0.00397		< 49.9		< 49.9	*1	< 49.9		< 49.9			
		6 - 7	510	-	341		< 0.00199		< 0.00199		< 0.00199		< 0.00398		0.00398		< 49.8		< 49.8	*1	< 49.8		< 49.8			
		9 - 10	806	-	1,010		< 0.00200		< 0.00200		< 0.00200		< 0.00401		0.00401		< 49.9		< 49.9	*1	< 49.9		< 49.9			
		14 - 15	605	-	492		< 0.00200		< 0.00200		< 0.00200		< 0.00399		0.00399		< 49.9		< 49.9	*1	< 49.9		< 49.9			
		19 - 20	381	-	314		< 0.00201		< 0.00201		< 0.00201		< 0.00402		0.00402		< 49.8		< 49.8	*1	< 49.8		< 49.8			
BH-2	8/31/2021	0 - 1	-	-	67.4		< 0.00202		< 0.00202		< 0.00202		< 0.00403		0.00403		< 50.0		1830	*1	334		***2,160***			
		2 - 3	184	-	40.1		< 0.00202		< 0.00202		< 0.00202		< 0.00403		0.00403		< 50.0		< 50.0	*1	< 50.0		< 50.0			
		4 - 5	629	-	294		< 0.00201		< 0.00201		< 0.00201		< 0.00402		0.00402		< 49.9		105	*1	< 49.9		105			
		6 - 7	487	-	392		< 0.00200		< 0.00200		< 0.00200		< 0.00399		0.00399		< 49.9		< 49.9	*1	< 49.9		< 49.9			
		9 - 10	391	-	295		< 0.00199		< 0.00199		< 0.00199		< 0.00398		0.00398		< 49.8		67.9	*1	< 49.8		67.9			
BH-3	8/31/2021	0 - 1	73.8	-	23.4		< 0.00199		< 0.00199		< 0.00199		< 0.00398		0.00398		< 49.9		< 49.9	*1	< 49.9		< 49.9			
		2 - 3	64.5	-	24.7		< 0.00200		< 0.00200		< 0.00200		< 0.00399		0.00399		< 50.0		< 50.0	*1	< 50.0		< 50.0			
		4 - 5	201	-	89.5		< 0.00200		< 0.00200		< 0.00200		< 0.00401		0.00401		< 49.8		< 49.8	*1	< 49.8		< 49.8			

NOTES:

ft.	Feet
bgs	Below ground surface
ppm	Parts per million
mg/kg	Milligrams per kilogram
TPH	Total Petroleum Hydrocarbons
GRO	Gasoline range organics
DRO	Diesel range organics
ORO	Oil range organics
1	EPA Method 300.0
2	EPA Method 8021B
3	EPA Method 8015B NM

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

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

*1 LCS/LCSD RPD exceeds control limits.

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	NAPP2115525504
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # *(assigned by OCD)*
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# *(if applicable)*

Unit Letter	Section	Township	Range	County

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)	Volume Recovered (bbls)
	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		

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2115525504
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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

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 _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Ramona Marcus Date: 6/6/2021

NAPP2115525504

Facility Name & Number:	Sopapilla SWD Flex Leak
Asset Area:	hConcho, Lea County
Release Discovery Date & Time:	5/25/2021
Release Type:	Produced Water
Provide any known details about the event:	Lat 32.29802, Lon -103.56710,SWD flex line damaged by unknown party, OFF LOCATION

Spill Calculation - Subsurface Spill - Rectangle

Was the release on pad or off-pad?	See reference table below
Has it rained at least a half inch in the last 24 hours?	See reference table below

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Depth (in.)	Soil Spilled-Fluid Saturation	Estimated volume of each area (bbl.)	Total Estimated Volume of Spill (bbl.)
Rectangle A	24.0	23.0	8.00	15.12%	65.504	9.904
Rectangle B					0.000	0.000
Rectangle C					0.000	0.000
Rectangle D					0.000	0.000
Rectangle E					0.000	0.000
Rectangle F					0.000	0.000
Rectangle G					0.000	0.000
Rectangle H					0.000	0.000
Rectangle I					0.000	0.000
Rectangle J					0.000	0.000
					Total Volume Release:	9.904

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

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 30576
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rmarcus	None	6/6/2021

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.

Form C-141
Page 4

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: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

APPENDIX B
NMOCD Correspondence

From: Hamlet, Robert, EMNRD
To: Esparza, Brittany
Cc: Gonzalez, Jessika L; Waggaman, Kelsy; Bratcher, Mike, EMNRD; Hensley, Chad, EMNRD
Subject: (Extension Approval) Sopapilla State 2D CTB (NAPP2115525504) 05-25-2021
Date: Thursday, August 26, 2021 8:43:00 AM

RE: Incident #**NAPP2115525504**

Brittany,

Your request for an extension to **September 25th, 2021** is approved.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Esparza, Brittany <Brittany.Esparza@conocophillips.com>
Sent: Tuesday, August 24, 2021 9:17 AM
To: EMNRD-OCD-District1spills <EMNRD-OCD-District1spills@state.nm.us>; spills@slo.state.nm.us
Cc: Gonzalez, Jessika L <Jessika.L.Gonzalez@conocophillips.com>; Waggaman, Kelsy <Kelsy.Waggaman@conocophillips.com>; Esparza, Brittany <Brittany.Esparza@conocophillips.com>
Subject: (Extension Request #1) Sopapilla State 2D CTB (NAPP2115525504) 05-25-2021

To Whom it May Concern,

> Under the new spill rule a Work Plan or Closure Report is due for the above release on August 25, 2021. COG is requesting a one-month extension until September 25, 2021 in order to schedule drillers for site.
>
> Please let me know if you have any questions or concerns.

Thank you,
Brittany N. Esparza
Brittany N. Esparza | **Environmental Technician, Permian** | **ConocoPhillips**
O: 432-221-0398 | **C**: 432-349-1911 | 3CC-2064 Midland, Texas

APPENDIX C
Site Characterization Data

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 634912.403 **Northing (Y):** 3574370.67 **Radius:** 800

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 634912.403 **Northing (Y):** 3574370.67 **Radius:** 1600

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 Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03582 POD1	C	LE	4	1	1	14	23S	33E	636583	3575666	2114	590		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 634912.403 **Northing (Y):** 3574370.67 **Radius:** 2400

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 Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03582 POD1	C	LE	4	1	1	14	23S	33E	636583	3575666	2114	590		
C 02278	CUB	LE	3	4	2	28	23S	33E	634484	3571989*	2419	650	400	250
C 02277	CUB	LE	2	3	4	20	23S	33E	632663	3572970*	2649	550	400	150
C 02280	CUB	LE	3	2	4	28	23S	33E	634489	3571586*	2816	650	400	250

Average Depth to Water: **400 feet**

Minimum Depth: **400 feet**

Maximum Depth: **400 feet**

Record Count: 4

UTMNAD83 Radius Search (in meters):

Easting (X): 634912.403 **Northing (Y):** 3574370.67 **Radius:** 3200

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

New Mexico NFHL Data

June 15, 2021

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

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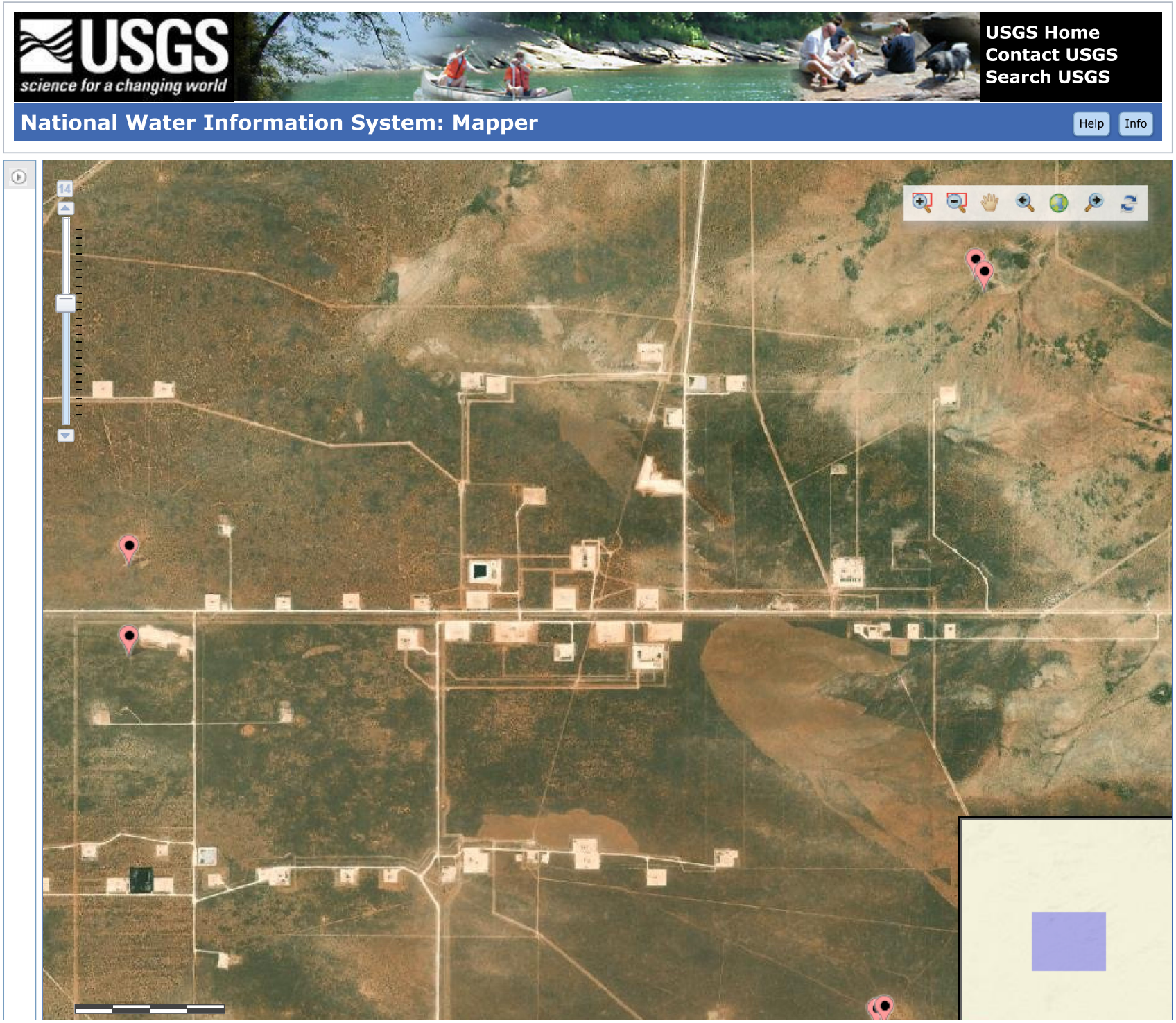
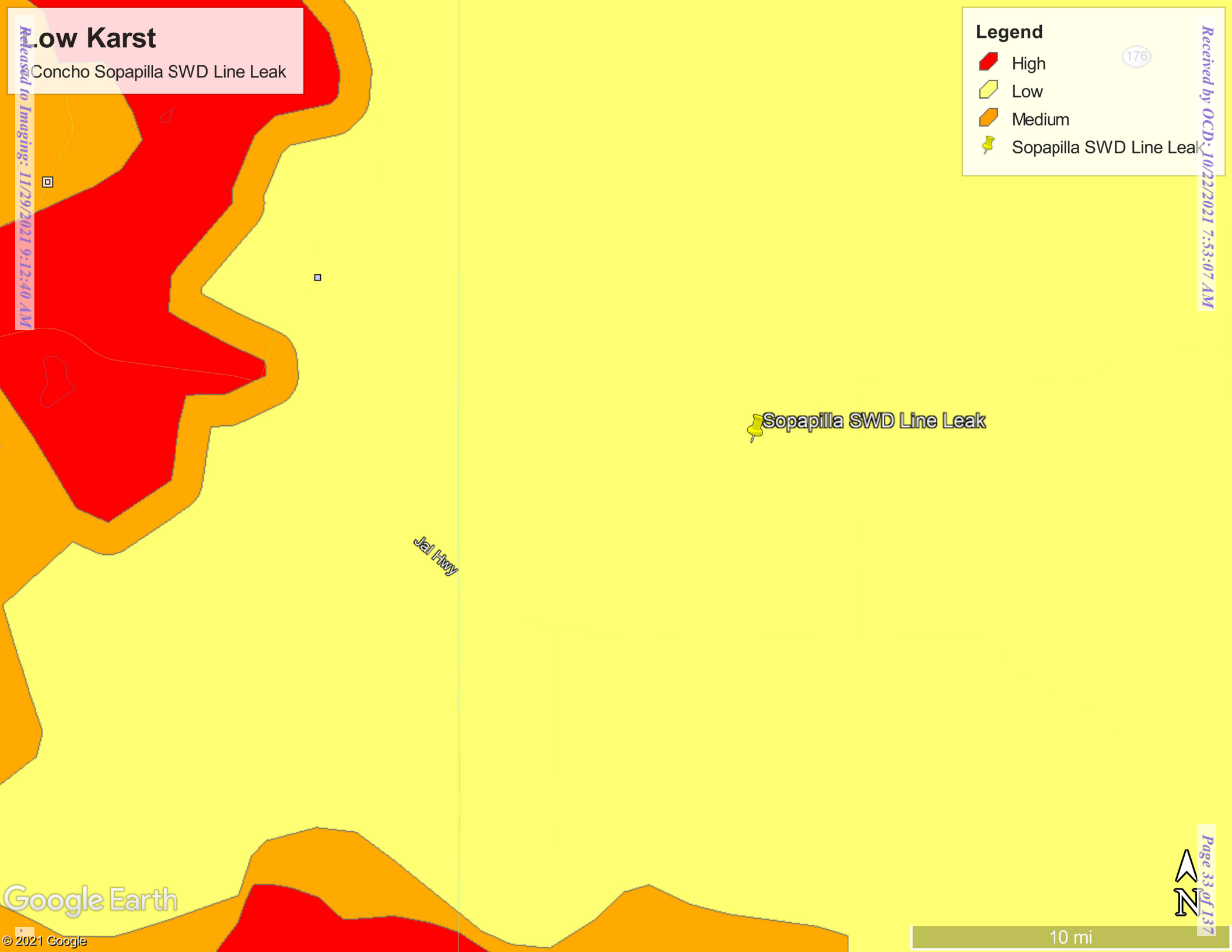
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.





APPENDIX D
Boring Logs

212C-MD-02532A | TETRA TECH | **LOG OF BORING AH-1** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298162°, -103.567258° | Surface Elevation: 3716 ft

Borehole Number: AH-1 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			70									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.		AH-1 (0-1')
			68.4											AH-1 (1-1.5')
			74.4											AH-1 (2-2.5')
			67.2										3.5	AH-1 (3-3.5')

Bottom of borehole at 3.5 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING AH-2** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298107°, -103.567140° | Surface Elevation: 3715 ft

Borehole Number: AH-2 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			83									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.		AH-2 (0-1')
			47.3										1.5	AH-2 (1-1.5')

Bottom of borehole at 1.5 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING AH-3** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298056°, -103.567221° | Surface Elevation: 3715 ft

Borehole Number: AH-3 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			3510									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.		AH-3 (0-1')
			4620											AH-3 (1-1.5')
			1790											AH-3 (2-2.5')
			4760											AH-3 (3-3.5')
			5910										4.5	AH-3 (4-4.5')

Bottom of borehole at 4.5 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING AH-4** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298035°, -103.567118° | Surface Elevation: 3715 ft

Borehole Number: AH-4 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			1820									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.		AH-4 (0-1')
			3200											AH-4 (1-1.5')
			850											AH-4 (2-2.5')
			2450											AH-4 (3-3.5')
			7140										4.5	AH-4 (4-4.5')

Bottom of borehole at 4.5 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING H-1** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298227°, -103.567188° | Surface Elevation: 3715 ft

Borehole Number: H-1 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			60.5									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.	1	H-1 (0-1')

Bottom of borehole at 1.0 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:
Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING H-2** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298116°, -103.567052° | Surface Elevation: 3714 ft

Borehole Number: H-2 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			57									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.	1	H-2 (0-1')

Bottom of borehole at 1.0 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:
Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING H-3** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298016°, -103.567064° | Surface Elevation: 3714 ft

Borehole Number: H-3 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			233									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.	1	H-3 (0-1')
												Bottom of borehole at 1.0 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING H-4** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298014°, -103.567264° | Surface Elevation: 3716 ft

Borehole Number: H-4 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			1580									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.	1	H-4 (0-1')

Bottom of borehole at 1.0 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:
Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING H-5** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298116°, -103.567317° | Surface Elevation: 3717 ft

Borehole Number: H-5 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			350									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.	1	H-5 (0-1')

Bottom of borehole at 1.0 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING H-6** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298195°, -103.567314° | Surface Elevation: 3716 ft

Borehole Number: H-6 | Borehole Diameter (in.): 4 | Date Started: 6/25/2021 | Date Finished: 6/25/2021

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
			108									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.	1	H-6 (0-1')

Bottom of borehole at 1.0 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING BH-1** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298057°, -103.567236° | Surface Elevation: 3716 ft

Borehole Number: BH-1 | Borehole Diameter (in.): 8 | Date Started: 8/31/2021 | Date Finished: 8/31/2021

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: Reddish brown, loose to medium dense, damp.		BH-1 (0-1')
			620											BH-1 (2-3')
5			948											BH-1 (4-5')
			510											BH-1 (6-7')
													8	
10			806									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, dry to damp, clayey in part.		BH-1 (9-10')
15			605											BH-1 (14-15')
													19	
20			381									**-CALICHE-** CALICHE: White, hard, moderately cemented with calcium carbonate, with abundant gravel, occ. boulders.	20	BH-1 (19-20')

Bottom of borehole at 20.0 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A | TETRA TECH | **LOG OF BORING BH-2** | Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298042°, -103.567104° | Surface Elevation: 3715 ft

Borehole Number: BH-2 | Borehole Diameter (in.): 8 | Date Started: 8/31/2021 | Date Finished: 8/31/2021

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			-									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.		BH-2 (0-1')
			184											BH-2 (2-3')
5			629											BH-2 (4-5')
			487											BH-2 (6-7')
													8	
10			391									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, dry to damp, clayey in part.		BH-2 (9-10')
15			-											
20			-										20	
												-CALICHE- CALICHE: White, hard, moderately cemented with calcium carbonate, with abundant gravel, occ. boulders.		
25			-											
30			-											
35			-											
40			-											
45			-										45	
												-CALICHE- CALICHE: White, hard, heavily cemented with calcium carbonate, with abundant gravel, occ. boulders.	48	
50			-									**-SP-** SAND: Reddish brown, loose to medium dense, with trace gravel, dry.		
55			-										55	

Bottom of borehole at 55.0 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

212C-MD-02532A	TETRA TECH	**LOG OF BORING BH-3**	Page 1 of 1

Project Name: Sopapilla SWD Flowline Release Assessment

Borehole Location: GPS: 32.298003°, -103.567067° | Surface Elevation: 3714 ft

Borehole Number: BH-3 | Borehole Diameter (in.): 8 | Date Started: 8/31/2021 | Date Finished: 8/31/2021

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
			73.8									**-SM-** SILTY SAND: Reddish brown, loose to medium dense, damp.		BH-3 (0-1')
			64.5											BH-3 (2-3')
5			201										5	BH-3 (4-5')

Bottom of borehole at 5.0 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:

Analytical samples are shown in the Remarks column. Surface elevation is an estimated value based on Google Earth data.

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

APPENDIX E
Laboratory Analytical Data

CARDINAL Laboratories

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

July 07, 2021

BRITTANY LONG

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SOPAPILLA SWD LINE LEAK

Enclosed are the results of analyses for samples received by the laboratory on 06/30/21 13:47.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. 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

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: H - 1 (0-1') (H211700-01)

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	07/01/2021	ND	2.02	101	2.00	0.299	
Toluene*	<0.050	0.050	07/01/2021	ND	2.12	106	2.00	2.58	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	2.09	104	2.00	3.46	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	6.22	104	6.00	3.07	
Total BTEX	<0.300	0.300	07/01/2021	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	<16.0	16.0	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *110 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *117 %* *38.9-142*

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:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: H - 2 (0-1') (H211700-02)

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	07/01/2021	ND	2.02	101	2.00	0.299	
Toluene*	<0.050	0.050	07/01/2021	ND	2.12	106	2.00	2.58	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	2.09	104	2.00	3.46	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	6.22	104	6.00	3.07	
Total BTEX	<0.300	0.300	07/01/2021	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	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *109 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *112 %* *38.9-142*

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
BRITTANY LONG
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: H - 3 (0-1') (H211700-03)

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	07/01/2021	ND	2.02	101	2.00	0.299	
Toluene*	<0.050	0.050	07/01/2021	ND	2.12	106	2.00	2.58	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	2.09	104	2.00	3.46	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	6.22	104	6.00	3.07	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.2 %* *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	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	**69.7**	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	**40.3**	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *96.6 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *103 %* *38.9-142*

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
BRITTANY LONG
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: H - 4 (0-1') (H211700-04)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *114 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *116 %* *38.9-142*

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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:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: H - 5 (0-1') (H211700-05)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *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	**336**	16.0	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *114 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *117 %* *38.9-142*

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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:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: H - 6 (0-1') (H211700-06)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *111 %* *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	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *112 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *115 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 1 (0-1') (H211700-07)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *111 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *117 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 1 (1'-1.5') (H211700-08)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *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	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *111 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *115 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 1 (2'-2.5') (H211700-09)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**64.0**	16.0	07/01/2021	ND	416	104	400	3.77	

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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *106 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *111 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 1 (3'-3.5') (H211700-10)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**64.0**	16.0	07/01/2021	ND	400	100	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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *105 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *111 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 2 (0-1') (H211700-11)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	07/01/2021	ND	400	100	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	07/02/2021	ND	236	118	200	3.96	
DRO >C10-C28*	<10.0	10.0	07/02/2021	ND	249	125	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	07/02/2021	ND					

Surrogate: 1-Chlorooctane *116 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *120 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 2 (1'-1.5') (H211700-12)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *79.0 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *77.3 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 3 (0-1') (H211700-13)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**2600**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *77.8 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *75.6 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 3 (1'-1.5') (H211700-14)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *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	**4960**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *79.4 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *76.3 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 3 (2'-2.5') (H211700-15)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**3280**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *80.2 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *77.4 %* *38.9-142*

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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:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 3 (3'-3.5') (H211700-16)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *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	**4960**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *71.5 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *69.5 %* *38.9-142*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 3 (4'-4.5') (H211700-17)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**7600**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *77.5 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *75.5 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 4 (0-1') (H211700-18)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**3600**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	**25.9**	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *77.0 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *75.5 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 4 (1'-1.5') (H211700-19)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**3280**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *76.2 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *74.8 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 4 (2'-2.5') (H211700-20)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *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	**1540**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *80.1 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *78.1 %* *38.9-142*

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 4 (3'-3.5') (H211700-21)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *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	**2680**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *73.7 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *72.1 %* *38.9-142*

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Analytical Results For:

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

Received:	06/30/2021	Sampling Date:	06/25/2021
Reported:	07/07/2021	Sampling Type:	Soil
Project Name:	SOPAPILLA SWD LINE LEAK	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02532	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: AH - 4 (4'-4.5') (H211700-22)

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	07/01/2021	ND	2.02	101	2.00	2.26	
Toluene*	<0.050	0.050	07/01/2021	ND	1.96	98.0	2.00	2.67	
Ethylbenzene*	<0.050	0.050	07/01/2021	ND	1.89	94.4	2.00	2.56	
Total Xylenes*	<0.150	0.150	07/01/2021	ND	5.74	95.7	6.00	1.90	
Total BTEX	<0.300	0.300	07/01/2021	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *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	**6880**	16.0	07/01/2021	ND	400	100	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	07/06/2021	ND	222	111	200	4.25	
DRO >C10-C28*	<10.0	10.0	07/06/2021	ND	227	113	200	0.930	
EXT DRO >C28-C36	<10.0	10.0	07/06/2021	ND					

Surrogate: 1-Chlorooctane *76.7 %* *44.3-133*

Surrogate: 1-Chlorooctadecane *74.8 %* *38.9-142*

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CARDINAL Laboratories

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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.
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, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

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

Client Name: COG

Site Manager: Brittany Long

Project Name: Sopapilla SWD Line Leak

Project Location: (county, state) Lea County, NM

Project #: 212C-MD-02532

Invoice to: ConocoPhillips, Attention: Kelsy Wagaman

Receiving Laboratory: Cardinal Laboratories

Sampler Signature: Colton Berkstaff

Comments:

H211700 LAB # (LAB USE ONLY)

	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	# CONTAINERS	FILTERED (Y/N)
1	H-1 (0-1')	6/25/21			X			X	1	N
2	H-2 (0-1')	6/25/21			X			X	1	N
3	H-3 (0-1')	6/25/21			X			X	1	N
4	H-4 (0-1')	6/25/21			X			X	1	N
5	H-5 (0-1')	6/25/21			X			X	1	N
6	H-6 (0-1')	6/25/21			X			X	1	N
7	AH-1 (0-1')	6/25/21			X			X	1	N
8	AH-1 (1'-1.5')	6/25/21			X			X	1	N
9	AH-1 (2'-2.5')	6/25/21			X			X	1	N
10	AH-1 (3'-3.5')	6/25/21			X			X	1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Asbestos			Hold
1	X	X	X												X							
2	X	X	X												X							
3	X	X	X												X							
4	X	X	X												X							
5	X	X	X												X							
6	X	X	X												X							
7	X	X	X												X							
8	X	X	X												X							
9	X	X	X												X							
10	X	X	X												X							

Relinquished by: Colton Berkstaff Date: 6/30/21 Time:

Received by: Date: 6-30-21 Time: 1347

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature 5.5°

#113 T.O.

REMARKS:

☐ 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

Page 2 of

Tetra Tech, Inc.

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

Client Name: COG

Site Manager: Brittany Long

Project Name: Sopapilla SWD Line @ Leak

Project Location: (county, state) Lea County, NM

Project #: 212C-MD-02532

Invoice to: ConocoPhillips, Attention: Kelsy Waggaman

Receiving Laboratory: Cardinal Laboratories

Sampler Signature: Colton Blackstaff

Comments:

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	# CONTAINERS	FILTERED (Y/N)
H211700		YEAR:								
11	AH-2 (0-1')	6/25/21			X			X	1	N
12	AH-2 (1'-1.5')	6/25/21			X			X	1	N
13	AH-3 (0-1')	6/25/21			X			X	1	N
14	AH-3 (1'-1.5')	6/25/21			X			X	1	N
15	AH-3 (2'-2.5')	6/25/21			X			X	1	N
16	AH-3 (3'-3.5')	6/25/21			X			X	1	N
17	AH-3 (4'-4.5')	6/25/21			X			X	1	N
18	AH-4 (0-1')	6/25/21			X			X	1	N
19	AH-4 (1'-1.5')	6/25/21			X			X	1	N
20	AH-4 (2'-2.5')	6/25/21			X			X	1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Asbestos			Hold
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							
X	X	X												X							

Relinquished by: Colton Blackstaff Date: 6/30/21 Time:

Received by: Date: 6-30-21 Time: 1347

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature 5.5°

#113 T.O.

REMARKS:

☐ 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

Page 3 of

Tetra Tech. Inc.

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

Client Name: COG

Site Manager: Brittany Long

Project Name: Sopapilla SWD Line Leak

Project Location (county, state): Lea County, NM

Project #: 2126-MD-02532

Invoice to: Conoco Phillips, Attention: Kelly Waggaman

Receiving Laboratory: Cardinal Laboratories

Sampler Signature: Colton Bizkerstaff

Comments:

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Asbestos			Hold
H21700																															
21	AH-4 (3'-3.5')	6/25/21			X			X	1	N	X		X												X						
22	AH-4 (4'-4.5')	6/25/21			X			X	1	N	X		X												X						

Relinquished by: Colton Bizkerstaff Date: 6/30/21 Time:

Received by: Tamara Oldaker Date: 6-30-21 Time: 1347

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

ORIGINAL COPY

LAB USE ONLY

Sample Temperature 5.5°

#113 TO.

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-5791-1
Laboratory Sample Delivery Group: Lea County, NM
Client Project/Site: Sopapilla SWD

For:
Tetra Tech, Inc.
901 W Wall
Ste 100
Midland, Texas 79701

Attn: Clair Gonzales

JKramer

Authorized for release by:
9/9/2021 1:53:36 PM

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Laboratory Job ID: 880-5791-1
SDG: Lea County, NM

Table of Contents

Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 880-5791-1
Project/Site: Sopapilla SWD SDG: Lea County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Job ID: 880-5791-1

Laboratory: Eurofins Xenco, Midland

Narrative

Job Narrative
880-5791-1

Receipt
The samples were received on 9/3/2021 1:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-7618 and analytical batch 880-7614 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: BH-1 (2-3) (880-5791-2), BH-2 (2-3) (880-5791-9) and BH-2 (9-10) (880-5791-12). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (0-1)

Lab Sample ID: 880-5791-1
Matrix: Solid
Date Collected: 08/31/21 10:00
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 22:12	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 22:12	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 22:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/07/21 22:12	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 22:12	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/07/21 22:12	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/07/21 22:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*	*09/07/21 15:46*	*09/07/21 22:12*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*09/07/21 15:46*	*09/07/21 22:12*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 14:22	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		09/03/21 15:57	09/04/21 14:22	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 14:22	1
Total TPH	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*09/03/21 15:57*	*09/04/21 14:22*	*1*
o-Terphenyl	*98*		*70 - 130*	*09/03/21 15:57*	*09/04/21 14:22*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**615**		5.04		mg/Kg			09/04/21 14:54	1

Client Sample ID: BH-1 (2-3)

Lab Sample ID: 880-5791-2
Matrix: Solid
Date Collected: 08/31/21 10:10
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 22:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 22:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 22:32	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/07/21 22:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 22:32	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/07/21 22:32	1
Total BTEX	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/07/21 22:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*09/07/21 15:46*	*09/07/21 22:32*	*1*
1,4-Difluorobenzene (Surr)	*144*	*S1+*	*70 - 130*	*09/07/21 15:46*	*09/07/21 22:32*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 14:43	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (2-3)

Date Collected: 08/31/21 10:10
Date Received: 09/03/21 13:54

Lab Sample ID: 880-5791-2

Matrix: Solid

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8		mg/Kg		09/03/21 15:57	09/04/21 14:43	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 14:43	1
Total TPH	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*09/03/21 15:57*	*09/04/21 14:43*	*1*
o-Terphenyl	*117*		*70 - 130*	*09/03/21 15:57*	*09/04/21 14:43*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**280**		5.05		mg/Kg			09/04/21 15:11	1

Client Sample ID: BH-1 (4-5)

Date Collected: 08/31/21 10:20
Date Received: 09/03/21 13:54

Lab Sample ID: 880-5791-3

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/07/21 15:46	09/07/21 22:52	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/07/21 15:46	09/07/21 22:52	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/07/21 15:46	09/07/21 22:52	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		09/07/21 15:46	09/07/21 22:52	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/07/21 15:46	09/07/21 22:52	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		09/07/21 15:46	09/07/21 22:52	1
Total BTEX	<0.00397	U	0.00397		mg/Kg		09/07/21 15:46	09/07/21 22:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*09/07/21 15:46*	*09/07/21 22:52*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*09/07/21 15:46*	*09/07/21 22:52*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:04	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:04	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:04	1
Total TPH	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*09/03/21 15:57*	*09/04/21 15:04*	*1*
o-Terphenyl	*129*		*70 - 130*	*09/03/21 15:57*	*09/04/21 15:04*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**884**		5.01		mg/Kg			09/04/21 15:17	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (6-7)

Lab Sample ID: 880-5791-4
Matrix: Solid
Date Collected: 08/31/21 10:30
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 23:13	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 23:13	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 23:13	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/07/21 23:13	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/07/21 23:13	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/07/21 23:13	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/07/21 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*70 - 130*	*09/07/21 15:46*	*09/07/21 23:13*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*09/07/21 15:46*	*09/07/21 23:13*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 15:25	1
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8		mg/Kg		09/03/21 15:57	09/04/21 15:25	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 15:25	1
Total TPH	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*09/03/21 15:57*	*09/04/21 15:25*	*1*
o-Terphenyl	*116*		*70 - 130*	*09/03/21 15:57*	*09/04/21 15:25*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**341**		5.02		mg/Kg			09/04/21 15:22	1

Client Sample ID: BH-1 (9-10)

Lab Sample ID: 880-5791-5
Matrix: Solid
Date Collected: 08/31/21 10:40
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:33	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		09/07/21 15:46	09/07/21 23:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:33	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		09/07/21 15:46	09/07/21 23:33	1
Total BTEX	<0.00401	U	0.00401		mg/Kg		09/07/21 15:46	09/07/21 23:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*09/07/21 15:46*	*09/07/21 23:33*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*09/07/21 15:46*	*09/07/21 23:33*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:46	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (9-10)

Lab Sample ID: 880-5791-5
Matrix: Solid
Date Collected: 08/31/21 10:40
Date Received: 09/03/21 13:54

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:46	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:46	1
Total TPH	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*09/03/21 15:57*	*09/04/21 15:46*	*1*
o-Terphenyl	*124*		*70 - 130*	*09/03/21 15:57*	*09/04/21 15:46*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1010**		5.01		mg/Kg			09/04/21 15:28	1

Client Sample ID: BH-1 (14-15)

Lab Sample ID: 880-5791-6
Matrix: Solid
Date Collected: 08/31/21 10:50
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:54	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:54	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:54	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/07/21 23:54	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 23:54	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/07/21 23:54	1
Total BTEX	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/07/21 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*09/07/21 15:46*	*09/07/21 23:54*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*09/07/21 15:46*	*09/07/21 23:54*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 16:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		09/03/21 15:57	09/04/21 16:07	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 16:07	1
Total TPH	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*117*		*70 - 130*	*09/03/21 15:57*	*09/04/21 16:07*	*1*
o-Terphenyl	*127*		*70 - 130*	*09/03/21 15:57*	*09/04/21 16:07*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**492**		4.99		mg/Kg			09/04/21 15:33	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (19-20)

Lab Sample ID: 880-5791-7
Matrix: Solid
Date Collected: 08/31/21 11:00
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 01:43	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 01:43	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 01:43	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/07/21 15:46	09/08/21 01:43	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 01:43	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/07/21 15:46	09/08/21 01:43	1
Total BTEX	<0.00402	U	0.00402		mg/Kg		09/07/21 15:46	09/08/21 01:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*09/07/21 15:46*	*09/08/21 01:43*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*09/07/21 15:46*	*09/08/21 01:43*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 16:28	1
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8		mg/Kg		09/03/21 15:57	09/04/21 16:28	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 16:28	1
Total TPH	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*09/03/21 15:57*	*09/04/21 16:28*	*1*
o-Terphenyl	*125*		*70 - 130*	*09/03/21 15:57*	*09/04/21 16:28*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**314**		4.97		mg/Kg			09/04/21 15:39	1

Client Sample ID: BH-2 (0-1)

Lab Sample ID: 880-5791-8
Matrix: Solid
Date Collected: 08/31/21 11:30
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		09/08/21 09:25	09/08/21 15:34	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/08/21 09:25	09/08/21 15:34	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/08/21 09:25	09/08/21 15:34	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		09/08/21 09:25	09/08/21 15:34	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/08/21 09:25	09/08/21 15:34	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		09/08/21 09:25	09/08/21 15:34	1
Total BTEX	<0.00403	U	0.00403		mg/Kg		09/08/21 09:25	09/08/21 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*09/08/21 09:25*	*09/08/21 15:34*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*09/08/21 09:25*	*09/08/21 15:34*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 17:10	1

Eurofins Xenco, Midland

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-2 (0-1)

Lab Sample ID: 880-5791-8
Date Collected: 08/31/21 11:30
Matrix: Solid
Date Received: 09/03/21 13:54

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	1830	*1	50.0		mg/Kg		09/03/21 15:57	09/04/21 17:10	1
Oll Range Organics (Over C28-C36)	334		50.0		mg/Kg		09/03/21 15:57	09/04/21 17:10	1
Total TPH	2160		50.0		mg/Kg		09/03/21 15:57	09/04/21 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*09/03/21 15:57*	*09/04/21 17:10*	*1*
o-Terphenyl	*108*		*70 - 130*	*09/03/21 15:57*	*09/04/21 17:10*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	67.4		4.95		mg/Kg			09/04/21 15:56	1

Client Sample ID: BH-2 (2-3)

Lab Sample ID: 880-5791-9
Date Collected: 08/31/21 11:40
Matrix: Solid
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		09/07/21 15:46	09/08/21 02:24	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/07/21 15:46	09/08/21 02:24	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/07/21 15:46	09/08/21 02:24	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		09/07/21 15:46	09/08/21 02:24	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/07/21 15:46	09/08/21 02:24	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		09/07/21 15:46	09/08/21 02:24	1
Total BTEX	<0.00403	U	0.00403		mg/Kg		09/07/21 15:46	09/08/21 02:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*	*09/07/21 15:46*	*09/08/21 02:24*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*09/07/21 15:46*	*09/08/21 02:24*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 17:31	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0		mg/Kg		09/03/21 15:57	09/04/21 17:31	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 17:31	1
Total TPH	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*124*		*70 - 130*	*09/03/21 15:57*	*09/04/21 17:31*	*1*
o-Terphenyl	*128*		*70 - 130*	*09/03/21 15:57*	*09/04/21 17:31*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.1		4.97		mg/Kg			09/04/21 16:02	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-2 4-5)

Date Collected: 08/31/21 11:50
Date Received: 09/03/21 13:54

Lab Sample ID: 880-5791-10
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 02:44	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 02:44	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 02:44	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/07/21 15:46	09/08/21 02:44	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/07/21 15:46	09/08/21 02:44	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/07/21 15:46	09/08/21 02:44	1
Total BTEX	<0.00402	U	0.00402		mg/Kg		09/07/21 15:46	09/08/21 02:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*09/07/21 15:46*	*09/08/21 02:44*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*09/07/21 15:46*	*09/08/21 02:44*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 17:53	1
Diesel Range Organics (Over C10-C28)	**105**	***1**	49.9		mg/Kg		09/03/21 15:57	09/04/21 17:53	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 17:53	1
Total TPH	**105**		49.9		mg/Kg		09/03/21 15:57	09/04/21 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*09/03/21 15:57*	*09/04/21 17:53*	*1*
o-Terphenyl	*121*		*70 - 130*	*09/03/21 15:57*	*09/04/21 17:53*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**294**		4.95		mg/Kg			09/04/21 16:19	1

Client Sample ID: BH-2 (6-7)

Date Collected: 08/31/21 12:00
Date Received: 09/03/21 13:54

Lab Sample ID: 880-5791-11
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 03:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 03:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 03:05	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/08/21 03:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 03:05	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/08/21 03:05	1
Total BTEX	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/08/21 03:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*125*		*70 - 130*	*09/07/21 15:46*	*09/08/21 03:05*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*	*09/07/21 15:46*	*09/08/21 03:05*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:14	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-2 (6-7)

Lab Sample ID: 880-5791-11
Matrix: Solid
Date Collected: 08/31/21 12:00
Date Received: 09/03/21 13:54

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:14	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:14	1
Total TPH	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*114*		*70 - 130*	*09/03/21 15:57*	*09/04/21 18:14*	*1*
o-Terphenyl	*114*		*70 - 130*	*09/03/21 15:57*	*09/04/21 18:14*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**392**		5.00		mg/Kg			09/04/21 16:24	1

Client Sample ID: BH-2 (9-10)

Lab Sample ID: 880-5791-12
Matrix: Solid
Date Collected: 08/31/21 12:10
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:25	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:25	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:25	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/08/21 03:25	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:25	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/08/21 03:25	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/08/21 03:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*148*	*S1+*	*70 - 130*	*09/07/21 15:46*	*09/08/21 03:25*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*09/07/21 15:46*	*09/08/21 03:25*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 18:35	1
Diesel Range Organics (Over C10-C28)	**67.9**	***1**	49.8		mg/Kg		09/03/21 15:57	09/04/21 18:35	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 18:35	1
Total TPH	**67.9**		49.8		mg/Kg		09/03/21 15:57	09/04/21 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*09/03/21 15:57*	*09/04/21 18:35*	*1*
o-Terphenyl	*115*		*70 - 130*	*09/03/21 15:57*	*09/04/21 18:35*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**295**		5.00		mg/Kg			09/04/21 16:30	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-3 (0-1)

Lab Sample ID: 880-5791-13
Matrix: Solid
Date Collected: 08/31/21 14:00
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:46	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:46	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/08/21 03:46	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/07/21 15:46	09/08/21 03:46	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/08/21 03:46	1
Total BTEX	<0.00398	U	0.00398		mg/Kg		09/07/21 15:46	09/08/21 03:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*09/07/21 15:46*	*09/08/21 03:46*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*09/07/21 15:46*	*09/08/21 03:46*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:56	1
Total TPH	<49.9	U	49.9		mg/Kg		09/03/21 15:57	09/04/21 18:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*09/03/21 15:57*	*09/04/21 18:56*	*1*
o-Terphenyl	*123*		*70 - 130*	*09/03/21 15:57*	*09/04/21 18:56*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23.4**		4.99		mg/Kg			09/04/21 16:35	1

Client Sample ID: BH-3 (2-3)

Lab Sample ID: 880-5791-14
Matrix: Solid
Date Collected: 08/31/21 14:10
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:06	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:06	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:06	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/08/21 04:06	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:06	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/08/21 04:06	1
Total BTEX	<0.00399	U	0.00399		mg/Kg		09/07/21 15:46	09/08/21 04:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*09/07/21 15:46*	*09/08/21 04:06*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*09/07/21 15:46*	*09/08/21 04:06*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 19:17	1

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Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-3 (2-3)

Lab Sample ID: 880-5791-14
Matrix: Solid
Date Collected: 08/31/21 14:10
Date Received: 09/03/21 13:54

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0		mg/Kg		09/03/21 15:57	09/04/21 19:17	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 19:17	1
Total TPH	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*09/03/21 15:57*	*09/04/21 19:17*	*1*
o-Terphenyl	*98*		*70 - 130*	*09/03/21 15:57*	*09/04/21 19:17*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**24.7**		5.02		mg/Kg			09/04/21 16:41	1

Client Sample ID: BH-3 (4-5)

Lab Sample ID: 880-5791-15
Matrix: Solid
Date Collected: 08/31/21 14:20
Date Received: 09/03/21 13:54

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:26	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		09/07/21 15:46	09/08/21 04:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/08/21 04:26	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		09/07/21 15:46	09/08/21 04:26	1
Total BTEX	<0.00401	U	0.00401		mg/Kg		09/07/21 15:46	09/08/21 04:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*	*09/07/21 15:46*	*09/08/21 04:26*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*09/07/21 15:46*	*09/08/21 04:26*	*1*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 19:38	1
Diesel Range Organics (Over C10-C28)	<49.8	U *1	49.8		mg/Kg		09/03/21 15:57	09/04/21 19:38	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 19:38	1
Total TPH	<49.8	U	49.8		mg/Kg		09/03/21 15:57	09/04/21 19:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*108*		*70 - 130*	*09/03/21 15:57*	*09/04/21 19:38*	*1*
o-Terphenyl	*110*		*70 - 130*	*09/03/21 15:57*	*09/04/21 19:38*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**89.5**		4.99		mg/Kg			09/04/21 16:47	1

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)										
880-5786-A-26-D MS	Matrix Spike	126	105										
880-5786-A-26-E MSD	Matrix Spike Duplicate	112	103										
880-5790-A-1-H MS	Matrix Spike	109	98										
880-5790-A-1-I MSD	Matrix Spike Duplicate	114	95										
880-5791-1	BH-1 (0-1)	122	97										
880-5791-2	BH-1 (2-3)	110	144 S1+										
880-5791-3	BH-1 (4-5)	118	96										
880-5791-4	BH-1 (6-7)	74	99										
880-5791-5	BH-1 (9-10)	113	109										
880-5791-6	BH-1 (14-15)	105	94										
880-5791-7	BH-1 (19-20)	109	103										
880-5791-8	BH-2 (0-1)	104	111										
880-5791-9	BH-2 (2-3)	138 S1+	87										
880-5791-10	BH-2 4-5)	113	94										
880-5791-11	BH-2 (6-7)	125	78										
880-5791-12	BH-2 (9-10)	148 S1+	103										
880-5791-13	BH-3 (0-1)	116	87										
880-5791-14	BH-3 (2-3)	108	98										
880-5791-15	BH-3 (4-5)	120	77										
LCS 880-7618/1-A	Lab Control Sample	107	89										
LCS 880-7636/1-A	Lab Control Sample	112	104										
LCSD 880-7618/2-A	Lab Control Sample Dup	102	93										
LCSD 880-7636/2-A	Lab Control Sample Dup	107	104										
MB 880-7618/5-A	Method Blank	124	105										
MB 880-7636/5-A	Method Blank	105	98										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)										
880-5785-A-1-F MS	Matrix Spike	96	88										
880-5785-A-1-G MSD	Matrix Spike Duplicate	96	95										
880-5791-1	BH-1 (0-1)	96	98										
880-5791-2	BH-1 (2-3)	107	117										
880-5791-3	BH-1 (4-5)	122	129										
880-5791-4	BH-1 (6-7)	113	116										
880-5791-5	BH-1 (9-10)	122	124										
880-5791-6	BH-1 (14-15)	117	127										
880-5791-7	BH-1 (19-20)	122	125										
880-5791-8	BH-2 (0-1)	104	108										
880-5791-9	BH-2 (2-3)	124	128										
880-5791-10	BH-2 4-5)	116	121										
880-5791-11	BH-2 (6-7)	114	114										
880-5791-12	BH-2 (9-10)	106	115										

Surrogate Summary

Client: Tetra Tech, Inc. Job ID: 880-5791-1
Project/Site: Sopapilla SWD SDG: Lea County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1CO1	OTPH1								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
880-5791-13	BH-3 (0-1)	119	123								
880-5791-14	BH-3 (2-3)	99	98								
880-5791-15	BH-3 (4-5)	108	110								
LCS 880-7524/2-A	Lab Control Sample	98	96								
LCSD 880-7524/3-A	Lab Control Sample Dup	122	122								
MB 880-7524/1-A	Method Blank	101	109								

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-7618/5-A
Matrix: Solid
Analysis Batch: 7614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7618

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 20:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 20:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 20:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/07/21 15:46	09/07/21 20:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/07/21 15:46	09/07/21 20:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/07/21 15:46	09/07/21 20:21	1
Total BTEX	<0.00400	U	0.00400		mg/Kg		09/07/21 15:46	09/07/21 20:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*09/07/21 15:46*	*09/07/21 20:21*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*09/07/21 15:46*	*09/07/21 20:21*	*1*

Lab Sample ID: LCS 880-7618/1-A
Matrix: Solid
Analysis Batch: 7614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7618

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.100	0.08925		mg/Kg		89	70 - 130		
Toluene			0.100	0.09109		mg/Kg		91	70 - 130		
Ethylbenzene			0.100	0.1069		mg/Kg		107	70 - 130		
m-Xylene & p-Xylene			0.200	0.1881		mg/Kg		94	70 - 130		
o-Xylene			0.100	0.09501		mg/Kg		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 880-7618/2-A
Matrix: Solid
Analysis Batch: 7614

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 7618

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.100	0.1044		mg/Kg		104	70 - 130	16	35
Toluene			0.100	0.1111		mg/Kg		111	70 - 130	20	35
Ethylbenzene			0.100	0.1142		mg/Kg		114	70 - 130	7	35
m-Xylene & p-Xylene			0.200	0.2094		mg/Kg		105	70 - 130	11	35
o-Xylene			0.100	0.1036		mg/Kg		104	70 - 130	9	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: 880-5790-A-1-H MS
Matrix: Solid
Analysis Batch: 7614

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 7618

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<0.00201	U	0.0998	0.07846		mg/Kg		79	70 - 130		

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QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-5790-A-1-H MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 7614 — **Prep Batch: 7618**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	<0.00201	U F1	0.0998	0.06778	F1	mg/Kg		68	70 - 130
Ethylbenzene	<0.00201	U F2 F1	0.0998	0.05320	F1	mg/Kg		53	70 - 130
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.200	0.09757	F1	mg/Kg		49	70 - 130
o-Xylene	<0.00201	U F2 F1	0.0998	0.05294	F1	mg/Kg		52	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 880-5790-A-1-I MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 7614 — **Prep Batch: 7618**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.100	0.09236		mg/Kg		92	70 - 130	16	35
Toluene	<0.00201	U F1	0.100	0.09357		mg/Kg		93	70 - 130	32	35
Ethylbenzene	<0.00201	U F2 F1	0.100	0.1068	F2	mg/Kg		107	70 - 130	67	35
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.200	0.1991	F2	mg/Kg		99	70 - 130	68	35
o-Xylene	<0.00201	U F2 F1	0.100	0.09598	F2	mg/Kg		95	70 - 130	58	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: MB 880-7636/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 7637 — **Prep Batch: 7636**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/08/21 09:25	09/08/21 12:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/08/21 09:25	09/08/21 12:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/08/21 09:25	09/08/21 12:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/08/21 09:25	09/08/21 12:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/08/21 09:25	09/08/21 12:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/08/21 09:25	09/08/21 12:29	1
Total BTEX	<0.00400	U	0.00400		mg/Kg		09/08/21 09:25	09/08/21 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*09/08/21 09:25*	*09/08/21 12:29*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*09/08/21 09:25*	*09/08/21 12:29*	*1*

Lab Sample ID: LCS 880-7636/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 7637 — **Prep Batch: 7636**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09588		mg/Kg		96	70 - 130
Toluene	0.100	0.09057		mg/Kg		91	70 - 130

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 880-7636/1-A
Matrix: Solid
Analysis Batch: 7637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7636

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethylbenzene			0.100	0.08996		mg/Kg		90	70 - 130		
m-Xylene & p-Xylene			0.200	0.1841		mg/Kg		92	70 - 130		
o-Xylene			0.100	0.09159		mg/Kg		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 880-7636/2-A
Matrix: Solid
Analysis Batch: 7637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 7636

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.100	0.08896		mg/Kg		89	70 - 130	7	35
Toluene			0.100	0.08402		mg/Kg		84	70 - 130	8	35
Ethylbenzene			0.100	0.08218		mg/Kg		82	70 - 130	9	35
m-Xylene & p-Xylene			0.200	0.1715		mg/Kg		86	70 - 130	7	35
o-Xylene			0.100	0.08531		mg/Kg		85	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-5786-A-26-D MS
Matrix: Solid
Analysis Batch: 7637

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 7636

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<0.00200	U	0.0998	0.08768		mg/Kg		87	70 - 130		
Toluene	<0.00200	U	0.0998	0.08534		mg/Kg		85	70 - 130		
Ethylbenzene	<0.00200	U	0.0998	0.08509		mg/Kg		85	70 - 130		
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1803		mg/Kg		90	70 - 130		
o-Xylene	<0.00200	U	0.0998	0.09185		mg/Kg		92	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 880-5786-A-26-E MSD
Matrix: Solid
Analysis Batch: 7637

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 7636

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0994	0.08536		mg/Kg		85	70 - 130	3	35
Toluene	<0.00200	U	0.0994	0.07886		mg/Kg		79	70 - 130	8	35
Ethylbenzene	<0.00200	U	0.0994	0.07565		mg/Kg		76	70 - 130	12	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1524		mg/Kg		77	70 - 130	17	35
o-Xylene	<0.00200	U	0.0994	0.07722		mg/Kg		77	70 - 130	17	35

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-7524/1-A
Matrix: Solid
Analysis Batch: 7537

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 7524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 11:31	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 11:31	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 11:31	1
Total TPH	<50.0	U	50.0		mg/Kg		09/03/21 15:57	09/04/21 11:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130	09/03/21 15:57	09/04/21 11:31	1
o-Terphenyl	109		70 - 130	09/03/21 15:57	09/04/21 11:31	1

Lab Sample ID: LCS 880-7524/2-A
Matrix: Solid
Analysis Batch: 7537

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 7524

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	732.8		mg/Kg		73	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	834.6		mg/Kg		83	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	96		70 - 130

Lab Sample ID: LCSD 880-7524/3-A
Matrix: Solid
Analysis Batch: 7537

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 7524

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	893.4		mg/Kg		89	70 - 130	20	20
Diesel Range Organics (Over C10-C28)			1000	1081	*1	mg/Kg		108	70 - 130	26	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	122		70 - 130
o-Terphenyl	122		70 - 130

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-5785-A-1-F MS
Matrix: Solid
Analysis Batch: 7537

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 7524

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	893.7		mg/Kg		90	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *1	995	969.9		mg/Kg		97	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*88*		*70 - 130*

Lab Sample ID: 880-5785-A-1-G MSD
Matrix: Solid
Analysis Batch: 7537

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 7524

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	853.6		mg/Kg		86	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	998	1040		mg/Kg		104	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-7526/1-A
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			09/04/21 14:04	1

Lab Sample ID: LCS 880-7526/2-A
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	252.3		mg/Kg		101	90 - 110

Lab Sample ID: LCSD 880-7526/3-A
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	252.1		mg/Kg		101	90 - 110	0	20

QC Sample Results

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-5791-7 MS
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: BH-1 (19-20)
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	314		249	563.2		mg/Kg		100	90 - 110		

Lab Sample ID: 880-5791-7 MSD
Matrix: Solid
Analysis Batch: 7556

Client Sample ID: BH-1 (19-20)
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	314		249	564.7		mg/Kg		101	90 - 110	0	20

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

GC VOA

Analysis Batch: 7614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-1	BH-1 (0-1)	Total/NA	Solid	8021B	7618
880-5791-2	BH-1 (2-3)	Total/NA	Solid	8021B	7618
880-5791-3	BH-1 (4-5)	Total/NA	Solid	8021B	7618
880-5791-4	BH-1 (6-7)	Total/NA	Solid	8021B	7618
880-5791-5	BH-1 (9-10)	Total/NA	Solid	8021B	7618
880-5791-6	BH-1 (14-15)	Total/NA	Solid	8021B	7618
880-5791-7	BH-1 (19-20)	Total/NA	Solid	8021B	7618
880-5791-9	BH-2 (2-3)	Total/NA	Solid	8021B	7618
880-5791-10	BH-2 4-5)	Total/NA	Solid	8021B	7618
880-5791-11	BH-2 (6-7)	Total/NA	Solid	8021B	7618
880-5791-12	BH-2 (9-10)	Total/NA	Solid	8021B	7618
880-5791-13	BH-3 (0-1)	Total/NA	Solid	8021B	7618
880-5791-14	BH-3 (2-3)	Total/NA	Solid	8021B	7618
880-5791-15	BH-3 (4-5)	Total/NA	Solid	8021B	7618
MB 880-7618/5-A	Method Blank	Total/NA	Solid	8021B	7618
LCS 880-7618/1-A	Lab Control Sample	Total/NA	Solid	8021B	7618
LCSD 880-7618/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	7618
880-5790-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	7618
880-5790-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	7618

Prep Batch: 7618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-1	BH-1 (0-1)	Total/NA	Solid	5035	
880-5791-2	BH-1 (2-3)	Total/NA	Solid	5035	
880-5791-3	BH-1 (4-5)	Total/NA	Solid	5035	
880-5791-4	BH-1 (6-7)	Total/NA	Solid	5035	
880-5791-5	BH-1 (9-10)	Total/NA	Solid	5035	
880-5791-6	BH-1 (14-15)	Total/NA	Solid	5035	
880-5791-7	BH-1 (19-20)	Total/NA	Solid	5035	
880-5791-9	BH-2 (2-3)	Total/NA	Solid	5035	
880-5791-10	BH-2 4-5)	Total/NA	Solid	5035	
880-5791-11	BH-2 (6-7)	Total/NA	Solid	5035	
880-5791-12	BH-2 (9-10)	Total/NA	Solid	5035	
880-5791-13	BH-3 (0-1)	Total/NA	Solid	5035	
880-5791-14	BH-3 (2-3)	Total/NA	Solid	5035	
880-5791-15	BH-3 (4-5)	Total/NA	Solid	5035	
MB 880-7618/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-7618/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-7618/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-5790-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
880-5790-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 7636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-8	BH-2 (0-1)	Total/NA	Solid	5035	
MB 880-7636/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-7636/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-7636/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-5786-A-26-D MS	Matrix Spike	Total/NA	Solid	5035	
880-5786-A-26-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

GC VOA

Analysis Batch: 7637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-8	BH-2 (0-1)	Total/NA	Solid	8021B	7636
MB 880-7636/5-A	Method Blank	Total/NA	Solid	8021B	7636
LCS 880-7636/1-A	Lab Control Sample	Total/NA	Solid	8021B	7636
LCSD 880-7636/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	7636
880-5786-A-26-D MS	Matrix Spike	Total/NA	Solid	8021B	7636
880-5786-A-26-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	7636

GC Semi VOA

Prep Batch: 7524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-1	BH-1 (0-1)	Total/NA	Solid	8015NM Prep	
880-5791-2	BH-1 (2-3)	Total/NA	Solid	8015NM Prep	
880-5791-3	BH-1 (4-5)	Total/NA	Solid	8015NM Prep	
880-5791-4	BH-1 (6-7)	Total/NA	Solid	8015NM Prep	
880-5791-5	BH-1 (9-10)	Total/NA	Solid	8015NM Prep	
880-5791-6	BH-1 (14-15)	Total/NA	Solid	8015NM Prep	
880-5791-7	BH-1 (19-20)	Total/NA	Solid	8015NM Prep	
880-5791-8	BH-2 (0-1)	Total/NA	Solid	8015NM Prep	
880-5791-9	BH-2 (2-3)	Total/NA	Solid	8015NM Prep	
880-5791-10	BH-2 4-5)	Total/NA	Solid	8015NM Prep	
880-5791-11	BH-2 (6-7)	Total/NA	Solid	8015NM Prep	
880-5791-12	BH-2 (9-10)	Total/NA	Solid	8015NM Prep	
880-5791-13	BH-3 (0-1)	Total/NA	Solid	8015NM Prep	
880-5791-14	BH-3 (2-3)	Total/NA	Solid	8015NM Prep	
880-5791-15	BH-3 (4-5)	Total/NA	Solid	8015NM Prep	
MB 880-7524/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-7524/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-7524/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-5785-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-5785-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 7537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-1	BH-1 (0-1)	Total/NA	Solid	8015B NM	7524
880-5791-2	BH-1 (2-3)	Total/NA	Solid	8015B NM	7524
880-5791-3	BH-1 (4-5)	Total/NA	Solid	8015B NM	7524
880-5791-4	BH-1 (6-7)	Total/NA	Solid	8015B NM	7524
880-5791-5	BH-1 (9-10)	Total/NA	Solid	8015B NM	7524
880-5791-6	BH-1 (14-15)	Total/NA	Solid	8015B NM	7524
880-5791-7	BH-1 (19-20)	Total/NA	Solid	8015B NM	7524
880-5791-8	BH-2 (0-1)	Total/NA	Solid	8015B NM	7524
880-5791-9	BH-2 (2-3)	Total/NA	Solid	8015B NM	7524
880-5791-10	BH-2 4-5)	Total/NA	Solid	8015B NM	7524
880-5791-11	BH-2 (6-7)	Total/NA	Solid	8015B NM	7524
880-5791-12	BH-2 (9-10)	Total/NA	Solid	8015B NM	7524
880-5791-13	BH-3 (0-1)	Total/NA	Solid	8015B NM	7524
880-5791-14	BH-3 (2-3)	Total/NA	Solid	8015B NM	7524
880-5791-15	BH-3 (4-5)	Total/NA	Solid	8015B NM	7524
MB 880-7524/1-A	Method Blank	Total/NA	Solid	8015B NM	7524
LCS 880-7524/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	7524

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

GC Semi VOA (Continued)

Analysis Batch: 7537 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-7524/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	7524
880-5785-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	7524
880-5785-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	7524

HPLC/IC

Leach Batch: 7526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-1	BH-1 (0-1)	Soluble	Solid	DI Leach	
880-5791-2	BH-1 (2-3)	Soluble	Solid	DI Leach	
880-5791-3	BH-1 (4-5)	Soluble	Solid	DI Leach	
880-5791-4	BH-1 (6-7)	Soluble	Solid	DI Leach	
880-5791-5	BH-1 (9-10)	Soluble	Solid	DI Leach	
880-5791-6	BH-1 (14-15)	Soluble	Solid	DI Leach	
880-5791-7	BH-1 (19-20)	Soluble	Solid	DI Leach	
880-5791-8	BH-2 (0-1)	Soluble	Solid	DI Leach	
880-5791-9	BH-2 (2-3)	Soluble	Solid	DI Leach	
880-5791-10	BH-2 4-5)	Soluble	Solid	DI Leach	
880-5791-11	BH-2 (6-7)	Soluble	Solid	DI Leach	
880-5791-12	BH-2 (9-10)	Soluble	Solid	DI Leach	
880-5791-13	BH-3 (0-1)	Soluble	Solid	DI Leach	
880-5791-14	BH-3 (2-3)	Soluble	Solid	DI Leach	
880-5791-15	BH-3 (4-5)	Soluble	Solid	DI Leach	
MB 880-7526/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-7526/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-7526/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-5791-7 MS	BH-1 (19-20)	Soluble	Solid	DI Leach	
880-5791-7 MSD	BH-1 (19-20)	Soluble	Solid	DI Leach	

Analysis Batch: 7556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-5791-1	BH-1 (0-1)	Soluble	Solid	300.0	7526
880-5791-2	BH-1 (2-3)	Soluble	Solid	300.0	7526
880-5791-3	BH-1 (4-5)	Soluble	Solid	300.0	7526
880-5791-4	BH-1 (6-7)	Soluble	Solid	300.0	7526
880-5791-5	BH-1 (9-10)	Soluble	Solid	300.0	7526
880-5791-6	BH-1 (14-15)	Soluble	Solid	300.0	7526
880-5791-7	BH-1 (19-20)	Soluble	Solid	300.0	7526
880-5791-8	BH-2 (0-1)	Soluble	Solid	300.0	7526
880-5791-9	BH-2 (2-3)	Soluble	Solid	300.0	7526
880-5791-10	BH-2 4-5)	Soluble	Solid	300.0	7526
880-5791-11	BH-2 (6-7)	Soluble	Solid	300.0	7526
880-5791-12	BH-2 (9-10)	Soluble	Solid	300.0	7526
880-5791-13	BH-3 (0-1)	Soluble	Solid	300.0	7526
880-5791-14	BH-3 (2-3)	Soluble	Solid	300.0	7526
880-5791-15	BH-3 (4-5)	Soluble	Solid	300.0	7526
MB 880-7526/1-A	Method Blank	Soluble	Solid	300.0	7526
LCS 880-7526/2-A	Lab Control Sample	Soluble	Solid	300.0	7526
LCSD 880-7526/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	7526
880-5791-7 MS	BH-1 (19-20)	Soluble	Solid	300.0	7526
880-5791-7 MSD	BH-1 (19-20)	Soluble	Solid	300.0	7526

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (0-1)

Lab Sample ID: 880-5791-1
Matrix: Solid
Date Collected: 08/31/21 10:00
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/07/21 22:12	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 14:22	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 14:54	CH	XEN MID

Client Sample ID: BH-1 (2-3)

Lab Sample ID: 880-5791-2
Matrix: Solid
Date Collected: 08/31/21 10:10
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/07/21 22:32	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 14:43	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:11	CH	XEN MID

Client Sample ID: BH-1 (4-5)

Lab Sample ID: 880-5791-3
Matrix: Solid
Date Collected: 08/31/21 10:20
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/07/21 22:52	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 15:04	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:17	CH	XEN MID

Client Sample ID: BH-1 (6-7)

Lab Sample ID: 880-5791-4
Matrix: Solid
Date Collected: 08/31/21 10:30
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/07/21 23:13	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 15:25	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:22	CH	XEN MID

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-1 (9-10)

Lab Sample ID: 880-5791-5
Matrix: Solid
Date Collected: 08/31/21 10:40
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/07/21 23:33	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 15:46	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:28	CH	XEN MID

Client Sample ID: BH-1 (14-15)

Lab Sample ID: 880-5791-6
Matrix: Solid
Date Collected: 08/31/21 10:50
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/07/21 23:54	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 16:07	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:33	CH	XEN MID

Client Sample ID: BH-1 (19-20)

Lab Sample ID: 880-5791-7
Matrix: Solid
Date Collected: 08/31/21 11:00
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 01:43	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 16:28	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:39	CH	XEN MID

Client Sample ID: BH-2 (0-1)

Lab Sample ID: 880-5791-8
Matrix: Solid
Date Collected: 08/31/21 11:30
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	7636	09/08/21 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7637	09/08/21 15:34	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 17:10	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 15:56	CH	XEN MID

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-2 (2-3)

Lab Sample ID: 880-5791-9
Matrix: Solid
Date Collected: 08/31/21 11:40
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 02:24	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 17:31	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 16:02	CH	XEN MID

Client Sample ID: BH-2 4-5)

Lab Sample ID: 880-5791-10
Matrix: Solid
Date Collected: 08/31/21 11:50
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 02:44	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 17:53	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 16:19	CH	XEN MID

Client Sample ID: BH-2 (6-7)

Lab Sample ID: 880-5791-11
Matrix: Solid
Date Collected: 08/31/21 12:00
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 03:05	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 18:14	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 16:24	CH	XEN MID

Client Sample ID: BH-2 (9-10)

Lab Sample ID: 880-5791-12
Matrix: Solid
Date Collected: 08/31/21 12:10
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 03:25	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 18:35	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 16:30	CH	XEN MID

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Client Sample ID: BH-3 (0-1)

Lab Sample ID: 880-5791-13
Matrix: Solid
Date Collected: 08/31/21 14:00
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 03:46	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 18:56	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 16:35	CH	XEN MID

Client Sample ID: BH-3 (2-3)

Lab Sample ID: 880-5791-14
Matrix: Solid
Date Collected: 08/31/21 14:10
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 04:06	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 19:17	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1	0 mL	1.0 mL	7556	09/04/21 16:41	CH	XEN MID

Client Sample ID: BH-3 (4-5)

Lab Sample ID: 880-5791-15
Matrix: Solid
Date Collected: 08/31/21 14:20
Date Received: 09/03/21 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	7618	09/07/21 15:46	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	7614	09/08/21 04:26	MR	XEN MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	7524	09/03/21 15:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			7537	09/04/21 19:38	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	7526	09/03/21 16:34	CA	XEN MID
Soluble	Analysis	300.0		1			7556	09/04/21 16:47	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Laboratory: Eurofins Xenco, Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5035	Solid	Total BTEX

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XEN MID = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

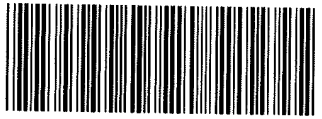
Sample Summary

Client: Tetra Tech, Inc.
Project/Site: Sopapilla SWD

Job ID: 880-5791-1
SDG: Lea County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-5791-1	BH-1 (0-1)	Solid	08/31/21 10:00	09/03/21 13:54
880-5791-2	BH-1 (2-3)	Solid	08/31/21 10:10	09/03/21 13:54
880-5791-3	BH-1 (4-5)	Solid	08/31/21 10:20	09/03/21 13:54
880-5791-4	BH-1 (6-7)	Solid	08/31/21 10:30	09/03/21 13:54
880-5791-5	BH-1 (9-10)	Solid	08/31/21 10:40	09/03/21 13:54
880-5791-6	BH-1 (14-15)	Solid	08/31/21 10:50	09/03/21 13:54
880-5791-7	BH-1 (19-20)	Solid	08/31/21 11:00	09/03/21 13:54
880-5791-8	BH-2 (0-1)	Solid	08/31/21 11:30	09/03/21 13:54
880-5791-9	BH-2 (2-3)	Solid	08/31/21 11:40	09/03/21 13:54
880-5791-10	BH-2 4-5)	Solid	08/31/21 11:50	09/03/21 13:54
880-5791-11	BH-2 (6-7)	Solid	08/31/21 12:00	09/03/21 13:54
880-5791-12	BH-2 (9-10)	Solid	08/31/21 12:10	09/03/21 13:54
880-5791-13	BH-3 (0-1)	Solid	08/31/21 14:00	09/03/21 13:54
880-5791-14	BH-3 (2-3)	Solid	08/31/21 14:10	09/03/21 13:54
880-5791-15	BH-3 (4-5)	Solid	08/31/21 14:20	09/03/21 13:54

Analysis Request of Chain of Custody Record



9/9/2021

Tetra Tech, Inc.

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

Client Name	ConocoPhillips / HConcho	Site Manager	Joe Tyler
Project Name	Sopapilla SWD	Contact Info	Email joe.tyler@tetratech.com Phone
Project Location (County, State)	Lea County, NM	Project #	212C-MD-02532A
Invoice to	Accounts Payable 901 West Wall Street Suite 100 Midland Texas 79701		
Receiving Laboratory	Xenco	Sampler Signature	Joe Tyler
Comments			

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR 2021 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	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	
	BH-1 (0-1)	8-31	1000		X			X		1	N	X		X												X				
	(2-3)		1010																											
	(4-5)		1020																											
	(6-7)		1030																											
	(9-10)		1040																											
	(14-15)		1050																											
	(19-20)		1100																											
	BH-2 (0-1)		1130																											
	(2-3)		1140																											
	(4-5)		1150																											

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Relinquished by	Date	Time	Received by	Date	Time
Joe Tyler	9-3-21		J KRAMER	9/3/21	1345
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time

ORIGINAL COPY

LAB USE ONLY

Sample Temperature 4.1/4.6

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 #:

Analysis Request of Chain of Custody Record

Loc 880
5791

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9/9/2021

Tetra Tech, Inc.

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

Client Name	Conoco Phillips / HCondro	Site Manager	" "
Project Name	Sapapilla SWD	Contact Info	Email " " Phone
Project Location (County, State)	" "	Project #	" "
Invoice to.	Accounts Payable 901 West Wall Street, Suite 100 Midland Texas 79701		
Receiving Laboratory	Xenco	Sampler Signature	Lee Tyler
Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR 2021 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	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	
	BH-2 (6-7)	8-31	1200		X			X		1	N	X		X												X				
	(9-10)		1210																											
	BH-3 (0-1)		1400																											
	(2-3)		1410																											
	(4-5)		1420																											

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Relinquished by	Date	Time	Received by	Date	Time
Lee Tyler	9-3-21		J KRAMER		
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by	Date	Time	Received by	Date	Time

ORIGINAL COPY

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB USE ONLY

Sample Temperature

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 #: _____

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 880-5791-1
SDG Number: Lea County, NM

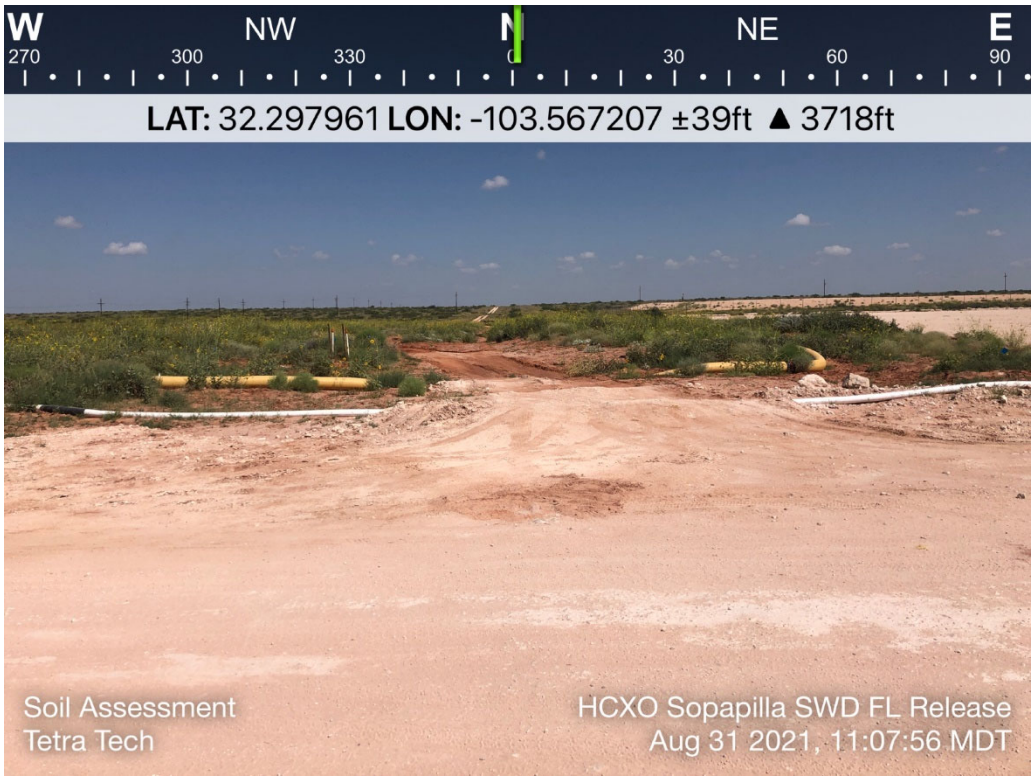
Login Number: 5791
List Number: 1
Creator: Teel, Brianna

List Source: Eurofins Xenco, Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

APPENDIX F
Photographic Documentation

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	1
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021



TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	2
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

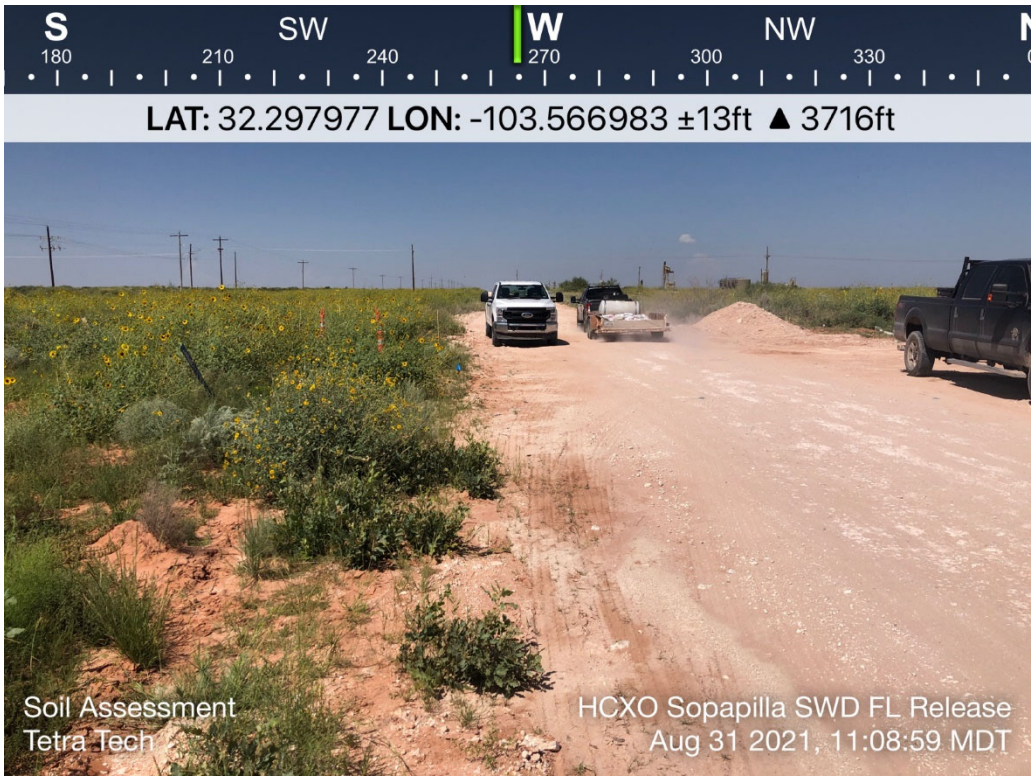
TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	3
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	4
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	5
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	6
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	7
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021



TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	8
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	9
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

TETRA TECH, INC. PROJECT NO. 212C-MD-02532A	DESCRIPTION	View of the release area near the flowline running to the Sopapilla SWD	10
	SITE NAME	ConocoPhillips Sopapilla SWD Release	8/31/2021

APPENDIX G
NMSLO Seed Mix Details

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lea County, New Mexico

Sopapilla State 2D CTB Flex Line Release

October 20, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

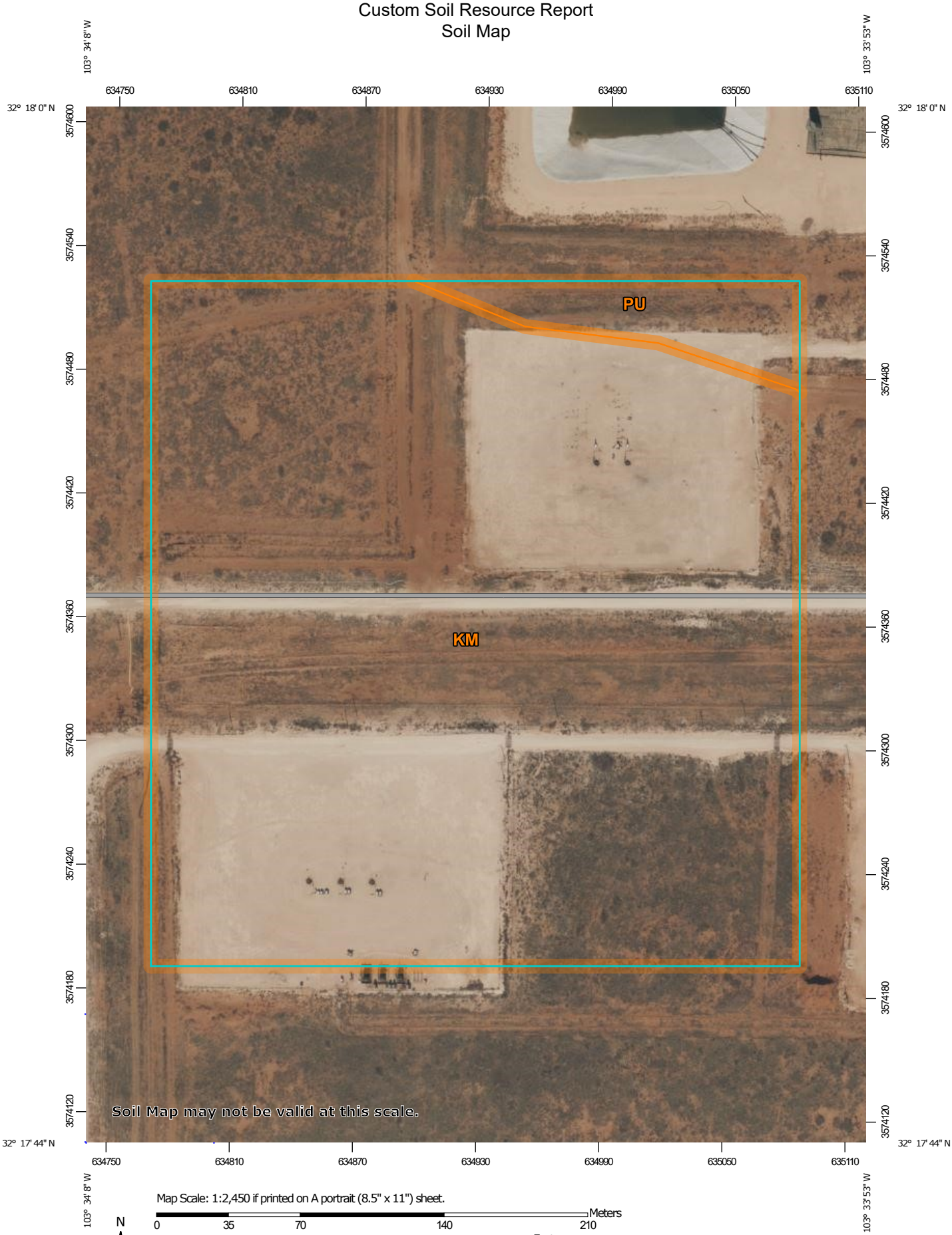
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,450 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 18, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KM	Kermit soils and Dune land, 0 to 12 percent slopes	24.8	95.1%
PU	Pyote and Maljamar fine sands	1.3	4.9%
Totals for Area of Interest		**26.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lea County, New Mexico

KM—Kermit soils and Dune land, 0 to 12 percent slopes

Map Unit Setting

National map unit symbol: dmpx
Elevation: 3,000 to 4,400 feet
Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 46 percent
Dune land: 44 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit

Setting

Landform: Dunes
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex
Parent material: Calcareous sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 8 inches: fine sand
C - 8 to 60 inches: fine sand

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R042XC022NM - Sandhills
Hydric soil rating: No

Description of Dune Land

Setting

Landform: Dunes
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 6 inches: fine sand
C - 6 to 60 inches: fine sand

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Pyote

Percent of map unit: 3 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Palomas

Percent of map unit: 3 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Wink

Percent of map unit: 2 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Maljamar

Percent of map unit: 2 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

PU—Pyote and Maljamar fine sands

Map Unit Setting

National map unit symbol: dmqq
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Pyote and similar soils: 46 percent
Maljamar and similar soils: 44 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyote

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 30 inches: fine sand
Bt - 30 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Description of Maljamar

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 24 inches: fine sand
Bt - 24 to 50 inches: sandy clay loam
Bkm - 50 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 10 percent
Ecological site: R042XC022NM - Sandhills
Hydric soil rating: No

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NMSLO Seed Mix Sandy (S)

SANDY (S) SITES SEED MIXTURE:

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Sand bluestem	**Elida, VNS, So.**	**2.0**	**F**
Little bluestem	**Cimarron, Pastura**	**3.0**	**F**
Black grama	**VNS, Southern**	**1.0**	**D**
Sand dropseed	**VNS, Southern**	**4.0**	**S**
Plains bristlegrass	**VNS, Southern**	**2.0**	**D**
Forbs:			
Firewheel (Gaillardia)	**VNS, Southern**	**1.0**	**D**
Annual Sunflower	**VNS, Southern**	**1.0**	**D**
Shrubs:			
Fourwing Saltbush	**VNS, Southern**	**1.0**	**F**
	Total PLS/acre	**16.0**	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box
VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at http://plants.usda.gov.

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

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 57436
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	Closure report due 03/28/2022	11/29/2021