

Remediation Plan approved
with conditions - see page 24.



NV

April 21, 2023

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

**Re: Release Characterization and Remediation Work Plan
ConocoPhillips
Zia Hills CR-1 Transfer Line Release
Unit Letters E, Section 03, Township 26 South, and Range 31 East,
Lea County, New Mexico
Incident ID NAPP2231554934**

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips Company (COP) to assess a release that occurred from a transfer line in the Zia Hills area, adjacent to CR-1. The release footprint is located inside Public Land Survey System (PLSS) Unit Letters E, Section 03, Township 26 South, and Range 31 East, Lea County, New Mexico. The release site coordinates are 32.074950°, -103.670752°. The Site location is shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico Form C-141 Initial Report (Appendix A), the release was discovered on October 29, 2022. The cause of the release was noted as resulting from "3rd party potentially cut the line," and the responsible party at the time of the C-141 had not been identified. Approximately 249 barrels (bbls) of produced water were reported released, of which 20 bbls were recovered. These volumes are estimates. The cut line is owned by COP; therefore, COP submitted the Form C-141 Initial Report to meet reporting requirements. The New Mexico Oil Conservation District (NMOCD) received this initial Form C-141 on November 11, 2022, and subsequently assigned the release the Incident ID NAPP2231554934. On behalf of ConocoPhillips, Tetra Tech requested a 90-day extension on January 31, 2023 to complete assessment and associated reporting for the Release site. The Extension request was approved the same day. A copy of the regulatory correspondence is included in Appendix B.

SITE CHARACTERIZATION

A site characterization was performed and no watercourses, sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, 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 within a New Mexico oil and gas production area and is in an area of low karst potential.

According to the New Mexico Office of the State Engineers (NMOSE) reporting system, there are no water wells within ½ mile (800 meters) of the Site. There is one (1) water well within 2.88 miles (4,641 meters) of the site with a depth to groundwater of 155 feet below ground surface (bgs). The site characterization data is included as Appendix C.

Tetra Tech

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LAND OWNERSHIP

The Site is located on land owned by the Bureau of Land Management (BLM). Following the release, a cultural survey within the release footprint and the surrounding vicinity was conducted by Goshawk Environmental Consulting. The area was negative for cultural resources. The BLM cleared the Site for remediation activities following a review of the survey.

REGULATORY FRAMEWORK

Based upon the release footprint location and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used in attempt 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.

Due to the lack of groundwater data within 0.5 miles of the Site and in lieu of drilling to determine the depth to groundwater, the reclamation requirements for surface soils (0-4 feet bgs) outside of active oil and gas operations will currently be applied to the release area. Thus, based on the site characterization and 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	100 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

However, if concentrations in soils below 4 feet bgs are found to exceed the reclamation requirements, COP will determine whether a depth-to-water (DTW) boring is necessary to establish RRALs based on depth to groundwater in accordance with Table I of 19.15.29.12 NMAC.

SITE VISIT SUMMARY

Tetra Tech personnel, on behalf of COP, visited the Zia Hills CR-1 Transfer Line Release area on November 1, 2022 to visually assess current site conditions and take photographs of the reported release area. Based on observations in the field and information provided by COP, the release extent consists of approximately 14,492 square feet of pastureland, largely in the vicinity of existing lay flat poly lines.

During the site visit, the presumed release point was identified and is located near the entrance to a Plains Facility along Orla Road. The release extent runs along a bar ditch in pastureland parallel to Orla Road (CR-1) and is approximately 0.28-miles in length. The width is variable but ranges from as wide as 30 feet to as narrow as 6 feet in some areas. Tetra Tech personnel observed multiple areas of soil staining running along the release flow path and various areas with evidence of pooling fluids throughout the extent. There are multiple rights-of-way located to the west and east of the release extent and three pipeline rights-of-way running perpendicular through the middle of the release footprint. Landowner fencing is located adjacent to the release extent that runs north to south along Orla Road. A semi-permanent t-post fence owned by Plains Pipeline runs along the north side of the release extent. A temporary fence, composed of t-posts and cattle panel, was placed by operations on the east and south sides of the release extent.

Numerous surface lines, subsurface gas lines, subsurface water lines, and subsurface oil lines were noted as running along Orla Road and a right-of-way to the east. A Mewbourne Oil Company subsurface line and a DCP subsurface gas line were also identified.

Prior to the site visit, COP representatives visited the site on October 30, 2022, and took photographs of the release area. These photographs were provided to Tetra Tech and depict the cut lines, subsurface lines, pooling areas, surface staining and the extent of the release. Photographic documentation of current

site conditions during the October 2022 and November 2022 is included as Appendix D. The approximate release extent is presented in Figure 3.

SITE ASSESSMENT AND SAMPLING RESULTS

Tetra Tech personnel were onsite to delineate and sample the release area in March 2023. Soil samples were collected from fifteen (15) locations within and around the release to evaluate the vertical and horizontal extent of the release. AH-1 and AH-6 were installed via hand auger within the release extent to a maximum depth of 1.5 feet bgs. AH-7 through AH-14 were installed via hand auger around the perimeter of the release footprint to a depth of 1 foot bgs. Due to a hard, cemented layer below ground surface, refusal was met at 1.5' at sample locations AH-1 through AH-6. In order to obtain vertical delineation within the release extent, one (1) trench (T-1) was completed with heavy equipment to a depth of 2 feet bgs near the release point in the vicinity of boring location AH-1. The boring locations and trench location are shown on Figure 3A and Figure 3B.

A total of nineteen (19) samples were collected from the sample locations and transferred under chain of custody and analyzed within appropriate holding times by Cardinal Laboratories (Cardinal). The soil samples were analyzed for TPH via Method 8015 Modified, chloride via Method SM4500Cl-B, and BTEX via Method 8021B. A copy of the laboratory analytical report and chain-of-custody documentation are included in Appendix E.

Results from the March 2023 soil sampling events are summarized in Table 1. Analytical results associated with borings AH-1 through AH-4 were above reclamation requirements for TPH and/or chloride in soils. All other analytical results from the March 2023 sampling were below reclamation requirements. Vertical delineation was achieved at the AH-1/T-1 location. Horizontal delineation was achieved.

REMEDIATION WORK PLAN

Based on the analytical results from the assessment, impacted material within the release extent is proposed to be removed to depths indicated in Figure 4A and Figure 4B. Impacted soils will be excavated to a maximum depth of 1.5 feet below the surrounding surface or until a representative sample from the walls and bottom of the excavation is below the reclamation requirements for soils above 4 feet. Heavy equipment (backhoe and trackhoe) will be utilized to excavate areas outside the immediate vicinity of pressurized lines and will come no more than 4 feet from any pressurized lines. Impacted soils within the vicinity of the surface and subsurface lines will be removed to the maximum extent practicable using non-aggressive excavation methods. If rock refusal is encountered, hydro-excavation methods will be used to clean contaminated soil off rock. After the rock surface is clean, if staining is still observed, microbial strains will be applied to the rock surface to digest remaining organics and hydrocarbons, if present.

As stated previously, COP will drill a DTW boring to establish Site RRALs based on depth to groundwater if chloride, TPH and/or BTEX concentrations in soils are found to exceed reclamation requirements below 4 feet bgs. Once Site RRALs have been established in accordance with Table I of 19.15.29.12 NMAC, soil below 4 feet bgs with concentrations above these Site RRALs will be excavated utilizing the methods described above.

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. In accordance with Subsection D of 19.15.29.12 NMAC, the responsible party will notify the appropriate division district office prior to conducting confirmation sampling. The estimated volume of material to be remediated is approximately 600 cubic yards.

ALTERNATIVE CONFIRMATION SAMPLING PLAN

In accordance with 19.15.29.12(D)(1)(b) NMAC, ConocoPhillips proposes the following alternative confirmation sampling plan to adhere with NMOCD requirements. The proposed confirmation sample locations are depicted in Figure 7. Eleven (11) confirmation floor samples and twenty-four (24) confirmation

sidewall samples are proposed for verification of remedial activities. The proposed excavation encompasses a surface area of approximately 13,700 square feet.

These confirmation sidewall and floor samples will be representative of no more than approximately 400 square feet of excavated area. Confirmation samples will be sent to an accredited analytical laboratory for analysis of TPH (Method 8015 modified), BTEX (Method 8260B), and chloride (USEPA Method 300.0 or equivalent). Once results are received, the excavation will then be backfilled with clean material to pre-release surface grade.

REVEGETATION PLAN

Once acceptable confirmation sample results are received the excavation will then be backfilled with clean material to surface grade. The backfilled areas within the off-pad pasture will be seeded in the first favorable growing season to aid in revegetation. Based on the location of the Site, the seed mixture for LPC Sand/Shinnery Sites 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 Bureau of Land Management (BLM) 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 BLM seed mixture details and corresponding pounds pure live seed per acre are included in Appendix F.

CONCLUSION

Remediation activities at the Site are proposed to begin 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) 217-7254 or Christian at (512) 338-2861.

Sincerely,
Tetra Tech, Inc.



Ryan C Dickerson
Project Manager



Christian M. Llull, P.G.
Program Manager

cc:
Mr. Sam Widmer, RMR – ConocoPhillips
Ms. Shelly Taylor – Bureau of Land Management

List of Attachments

Figures:

- Figure 1 – Overview Map
- Figure 2 – Topographic Map
- Figure 3A – Approximate Release Extent and Site Assessment
- Figure 3B – Approximate Release Extent and Site Assessment
- Figure 4A – Proposed Remediation Extent
- Figure 4B – Proposed Remediation Extent
- Figure 5A – Alternative Confirmation Sampling Plan
- Figure 5B – Alternative Confirmation Sampling Plan

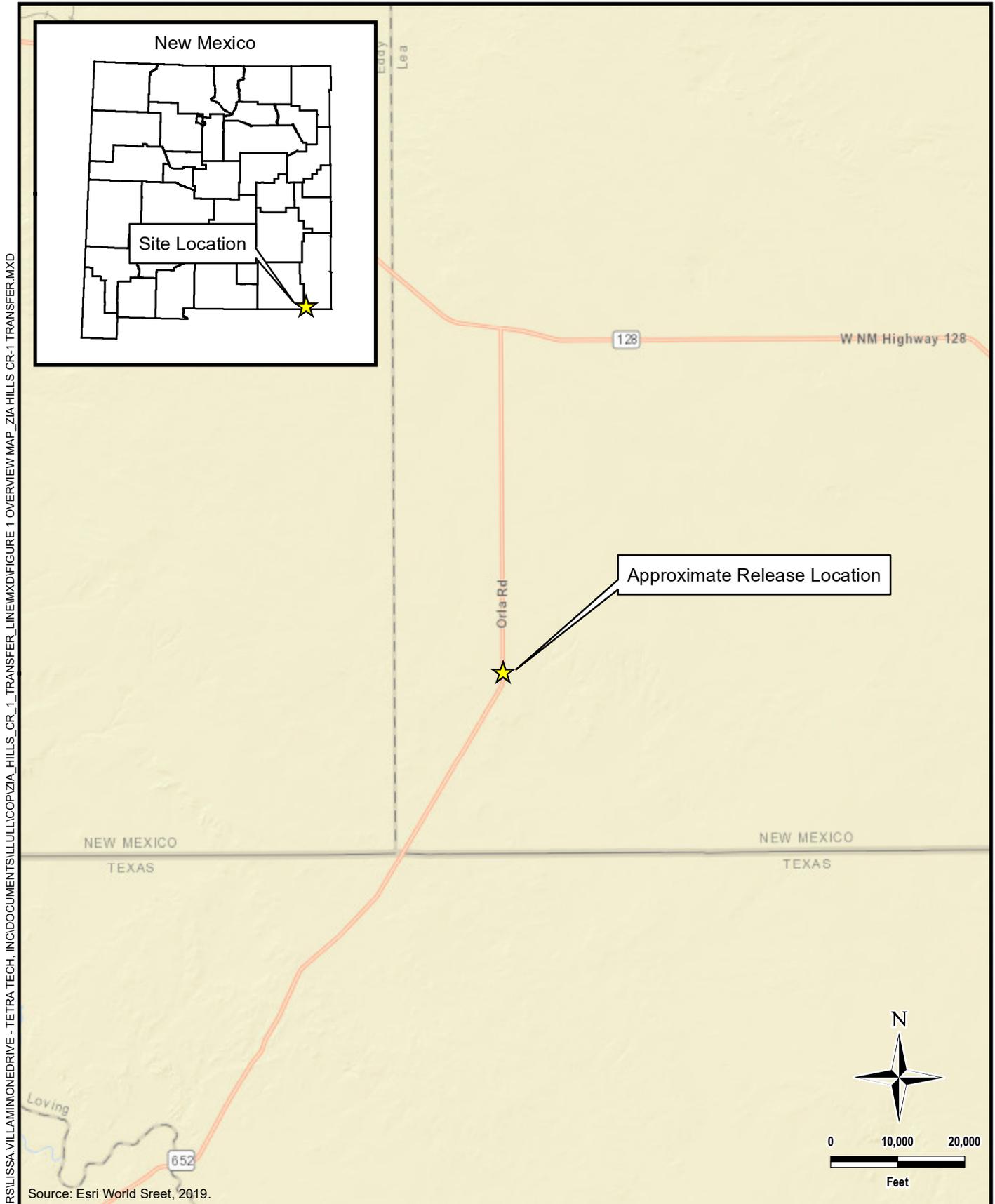
Tables:

- Table 1 – Summary of Analytical Results – Soil Assessment

Appendices:

- Appendix A – C-141 Form
- Appendix B – Regulatory Correspondence
- Appendix C – Site Characterization Data
- Appendix D – Photographic Documentation
- Appendix E – Laboratory Analytical Data
- Appendix F – BLM Seed Mixture Details

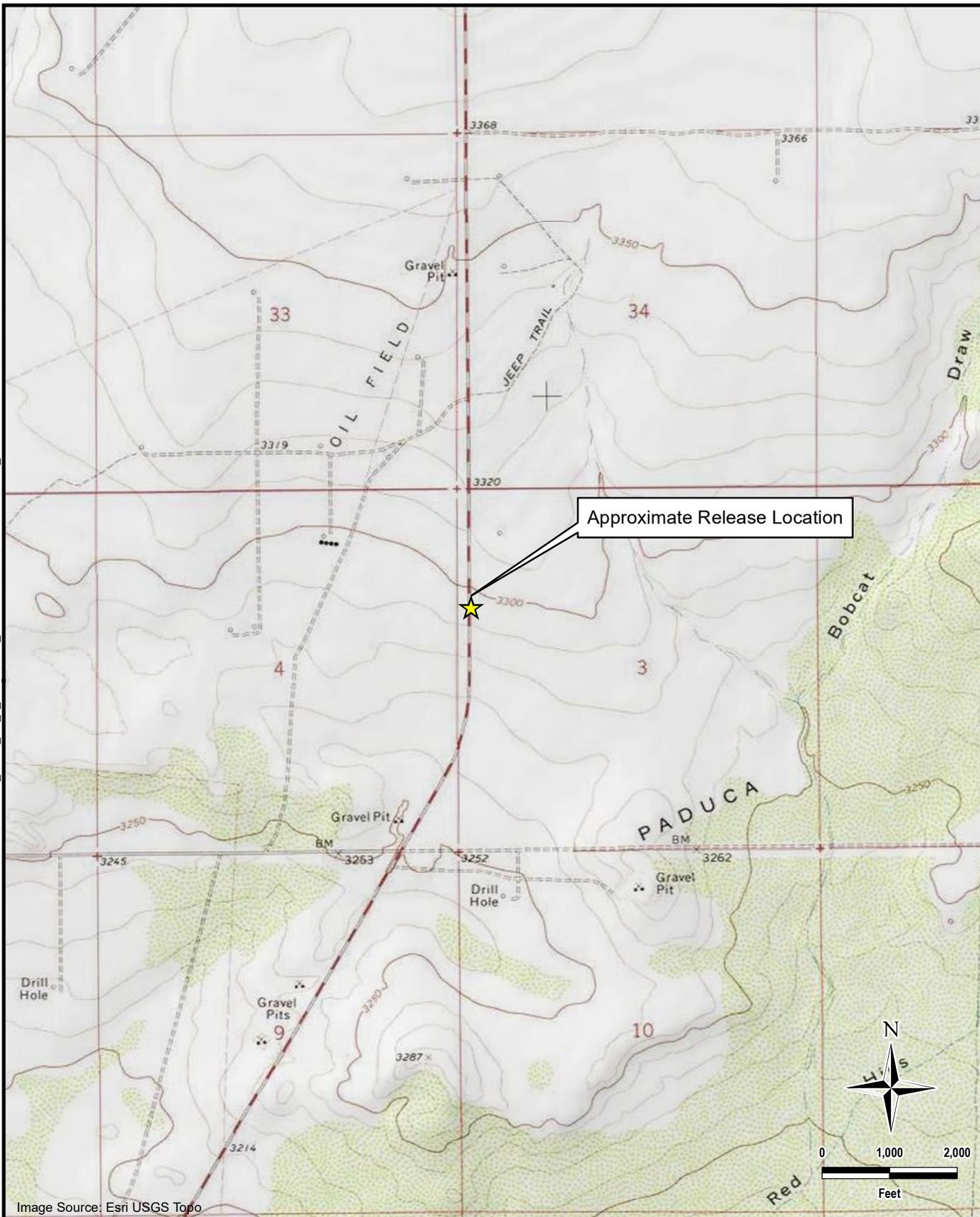
FIGURES



DOCUMENT PATH: C:\USERS\LISSA.VILLAMINONEDRIVE - TETRA TECH\INC\DOCUMENTS\LISSA.VILLAMINONEDRIVE\ZIA_HILLS_CR_1_TRANSFER_LINE\MXD\FIGURE 1 OVERVIEW MAP_ZIA_HILLS_CR_1_TRANSFER.MXD

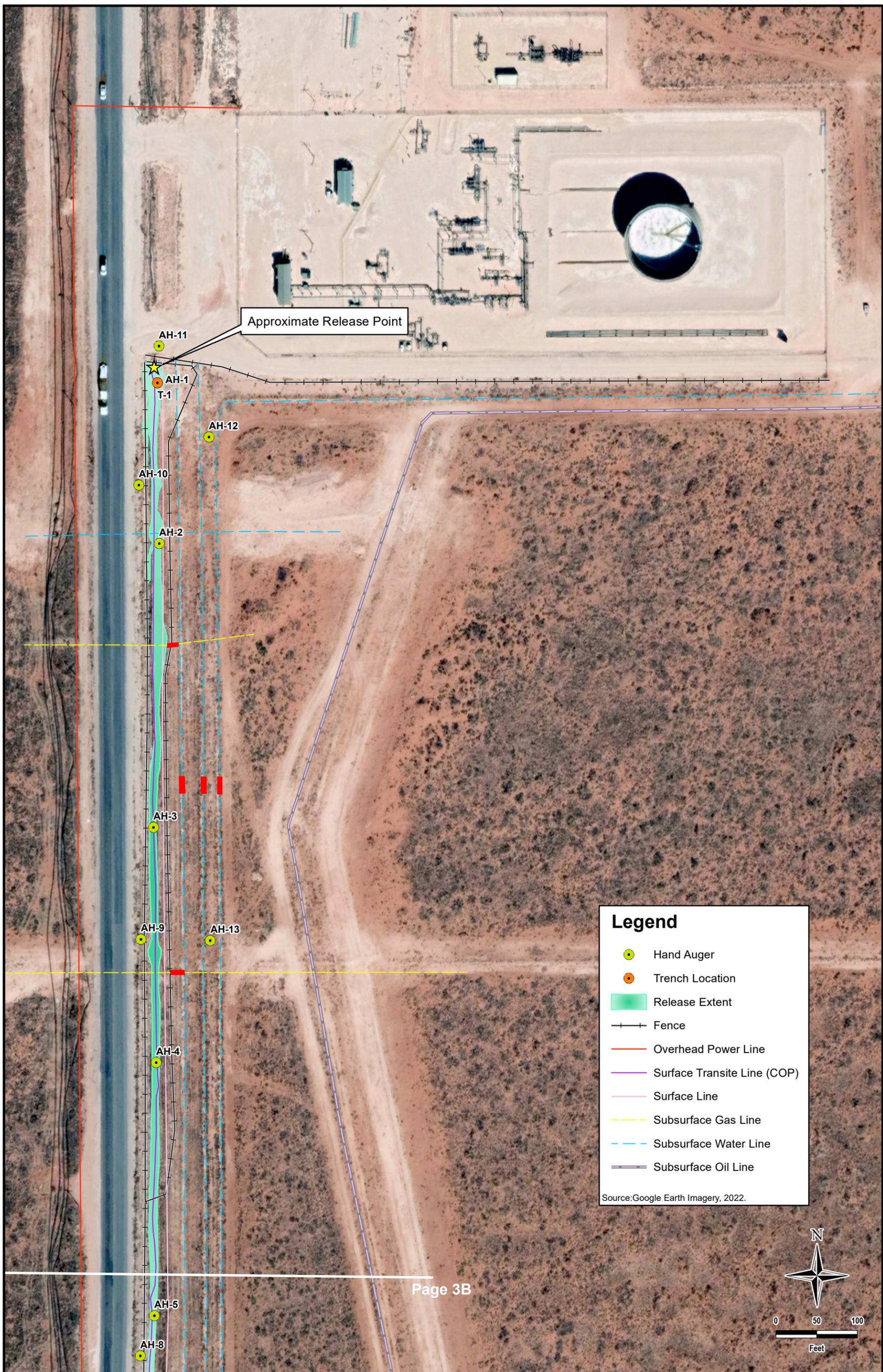
 TETRA TECH www.tetratech.com 901 West Wall Street, Suite 100 Midland, Texas 79701 Phone: (432) 682-4559 Fax: (432) 682-3946	CONOCOPHILLIPS (32.074950°, -103.670752°) LEA COUNTY, NEW MEXICO	PROJECT NO.: 212C-MD-02935 DATE: JANUARY 11, 2023 DESIGNED BY: LMV
	ZIA HILLS CR-1 TRANSFER LINE RELEASE OVERVIEW MAP	Figure No. 1

DOCUMENT PATH: C:\USERS\LISSA.VILLAMONEDRIVE - TETRA TECH\INC\DOCUMENTS\LISSA.VILLAMONEDRIVE\ZIA HILLS CR-1_TRANSFER LINE\MXD\FIGURE 2 TOPO MAP_ZIA HILLS CR-1_TRANSFER.MXD



 TETRA TECH www.tetrattech.com 901 West Wall Street, Suite 100 Midland, Texas 79701 Phone: (432) 682-4559 Fax: (432) 682-3946	CONOCOPHILLIPS (32.074950°, -103.670752°) LEA COUNTY, NEW MEXICO	PROJECT NO.: 212C-MD-02935 DATE: JANUARY 11, 2023 DESIGNED BY: LMV
	ZIA HILLS CR-1 TRANSFER LINE RELEASE TOPOGRAPHIC MAP	Figure No. 2

DOCUMENT PATH: C:\USERS\ISSA.VILLAMONEDRIVE - TETRA TECH\INC\DOCUMENTS\ILLULLUCOPIZIA_HILLS_CR_1_TRANSFER_LINE\MXD\FIGURE 3A APPROX RELEASE & ASSESS_ZIA_HILLS_CR-1_TRANSFER.MXD



Legend

- Hand Auger
- Trench Location
- Release Extent
- Fence
- Overhead Power Line
- Surface Transite Line (COP)
- Surface Line
- Subsurface Gas Line
- Subsurface Water Line
- Subsurface Oil Line

Source: Google Earth Imagery, 2022.



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<p>TETRA TECH www.tetrattech.com 901 West Wall Street, Suite 100 Midland, Texas 79701 Phone: (432) 682-4559 Fax: (432) 682-3946</p>	<p>CONOCOPHILLIPS NAPP2231554934 (32.074950°, -103.670752 °) EDDY COUNTY, NEW MEXICO</p> <p>ZIA HILLS CR-1 TRANSFER LINE RELEASE APPROXIMATE RELEASE EXTENT AND SITE ASSESSMENT</p>	<p>PROJECT NO.: 212C-MD-02935 DATE: MARCH 30, 2023 DESIGNED BY: LMV</p>
	<p>Figure No. 3A</p>	

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Legend

- Hand Auger
- Trench Location
- Release Extent
- Fence
- Overhead Power Line
- Surface Transite Line
- Surface Line
- Subsurface Water Line
- Subsurface Oil Line

Source: Google Earth Imagery, 2022.

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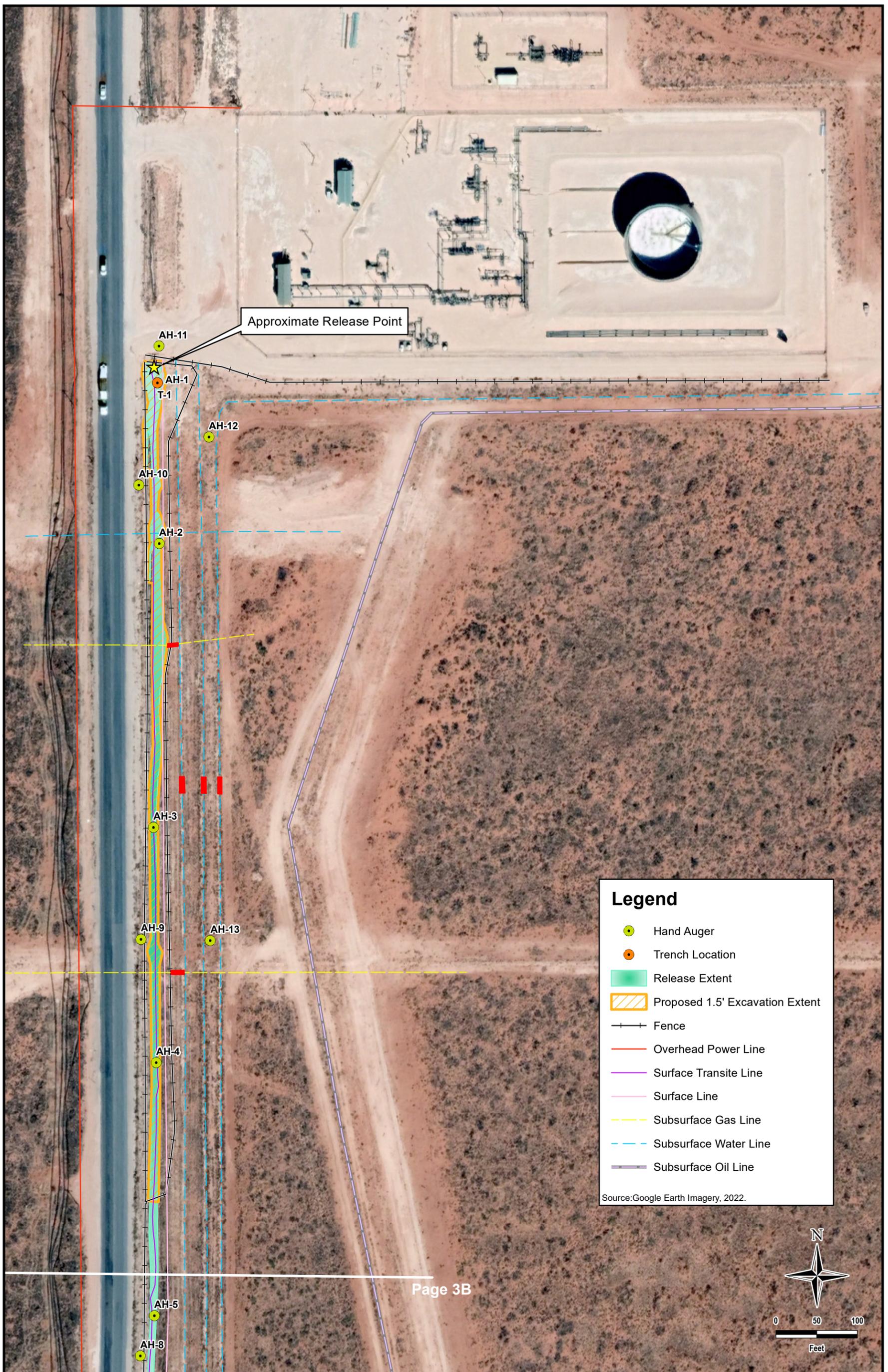
CONOCOPHILLIPS
 NAPP2231554934
 (32.074950°, -103.670752 °)
 EDDY COUNTY, NEW MEXICO

**ZIA HILLS CR-1 TRANSFER LINE RELEASE
 APPROXIMATE RELEASE EXTENT AND SITE ASSESSMENT**

PROJECT NO.: 212C-MD-02935
 DATE: MARCH 30, 2023
 DESIGNED BY: LMV

Figure No.
3B

DOCUMENT PATH: C:\USERS\ISSA.VILLAMONEDRIVE - TETRA TECH\INC\DOCUMENTS\ILLULLUCOPIZIA_HILLS_CR_1_TRANSFER_LINE\MXD\FIGURE 4A PROPOSED REMEDIATION_ZIA HILLS CR-1_TRANSFER.MXD



Legend

- Hand Auger
- Trench Location
- Release Extent
- Proposed 1.5' Excavation Extent
- Fence
- Overhead Power Line
- Surface Transite Line
- Surface Line
- Subsurface Gas Line
- Subsurface Water Line
- Subsurface Oil Line

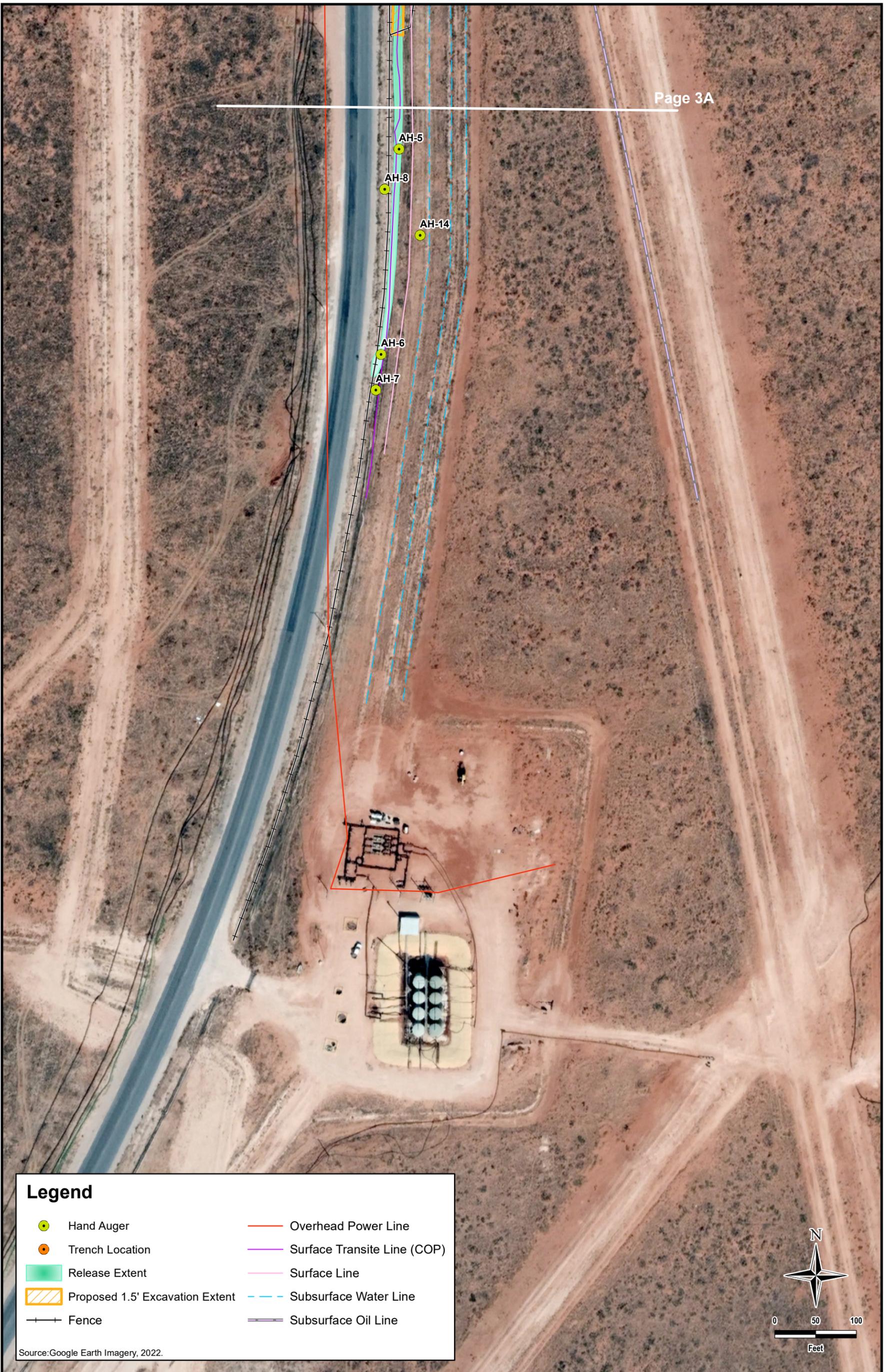
Source: Google Earth Imagery, 2022.

Page 3B



<p>TETRA TECH www.tetrattech.com 901 West Wall Street, Suite 100 Midland, Texas 79701 Phone: (432) 682-4559 Fax: (432) 682-3946</p>	<p>CONOCOPHILLIPS NAPP2231554934 (32.074950°, -103.670752 °) EDDY COUNTY, NEW MEXICO</p> <p>ZIA HILLS CR-1 TRANSFER LINE RELEASE PROPOSED REMEDIATION EXTENT</p>	<p>PROJECT NO.: 212C-MD-02935 DATE: MARCH 30, 2023 DESIGNED BY: LMV</p>
	<p>Figure No. 4A</p>	

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Legend

	Hand Auger		Overhead Power Line
	Trench Location		Surface Transite Line (COP)
	Release Extent		Surface Line
	Proposed 1.5' Excavation Extent		Subsurface Water Line
	Fence		Subsurface Oil Line

Source: Google Earth Imagery, 2022.



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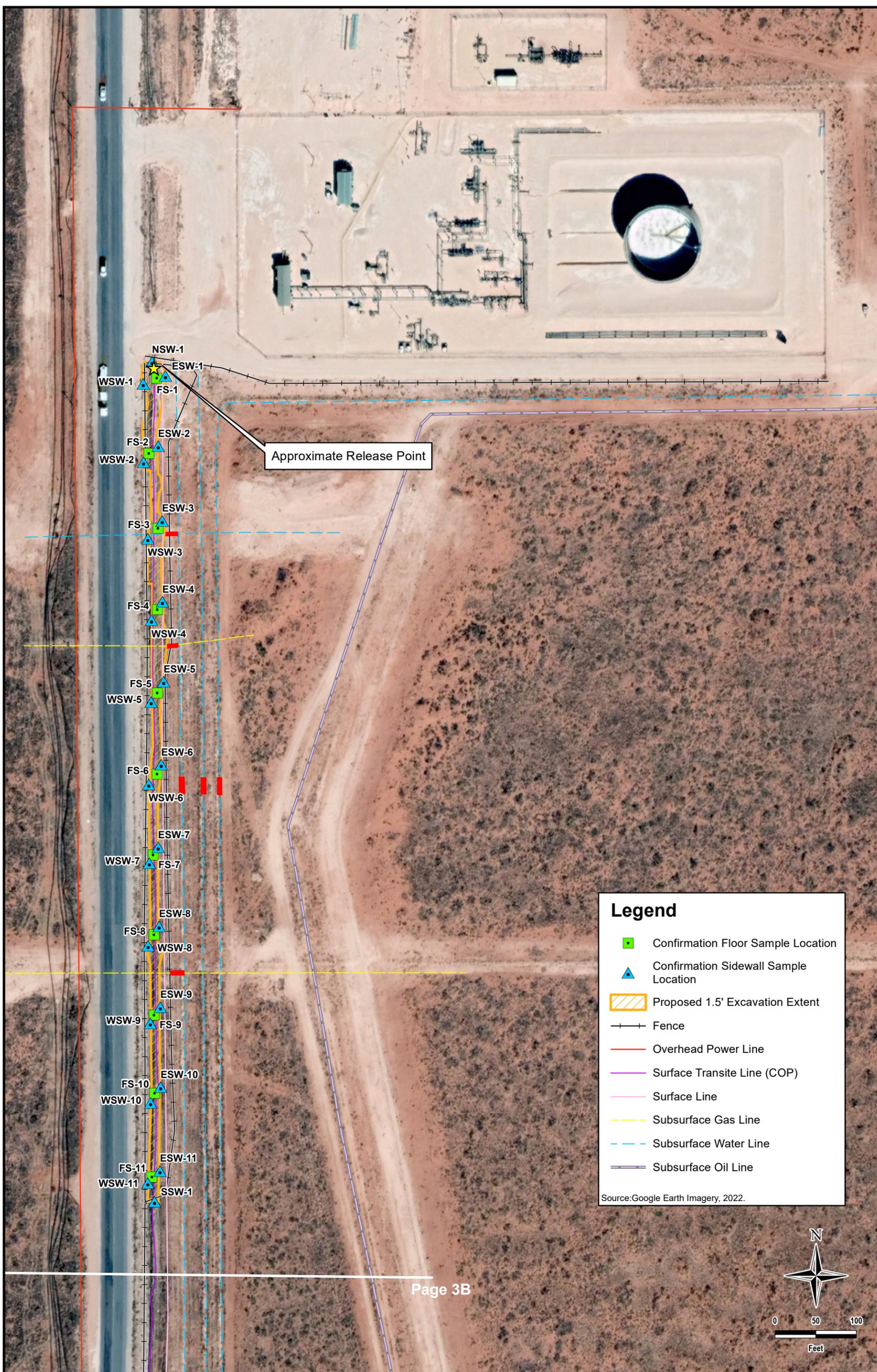
CONOCOPHILLIPS
 NAPP2231554934
 (32.074950°, -103.670752 °)
 EDDY COUNTY, NEW MEXICO

**ZIA HILLS CR-1 TRANSFER LINE RELEASE
 PROPOSED REMEDIATION EXTENT**

PROJECT NO.: 212C-MD-02935
 DATE: MARCH 30, 2023
 DESIGNED BY: LMV

Figure No.
4B

DOCUMENT PATH: C:\USERS\ISSA.VILLAMONEDRIVE - TETRA TECH\INC\DOCUMENTS\LULLULUCOPIZIA_HILLS_CR_1_TRANSFER_LINE\MXD\FIGURE 5A.ALT.CONFIRMATION_ZIA_HILLS_CR-1_TRANSFER.MXD



Legend

- Confirmation Floor Sample Location
- ▲ Confirmation Sidewall Sample Location
- Proposed 1.5' Excavation Extent
- +— Fence
- Overhead Power Line
- Surface Transite Line (COP)
- Surface Line
- Subsurface Gas Line
- Subsurface Water Line
- Subsurface Oil Line

Source: Google Earth Imagery, 2022.



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**ZIA HILLS CR-1 TRANSFER LINE RELEASE
 ALTERNATIVE CONFIRMATION SAMPLING PLAN**

PROJECT NO.: 212C-MD-02935
 DATE: MARCH 30, 2023
 DESIGNED BY: LMV

Figure No.
5A

WSW-11 FS-11 SSW-1

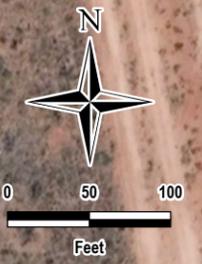
DOCUMENT PATH: C:\USERS\ISSA.VILLAMONEDRIVE - TETRA TECH\INC\DOCUMENTS\LULLUCOPIZIA_HILLS_CR_1_TRANSFER_LINE\MXD\FIGURE 5B ALT. CONFIRMATION_ZIA_HILLS_CR-1_TRANSFER.MXD



Legend

 Confirmation Floor Sample Location	 Overhead Power Line
 Confirmation Sidewall Sample Location	 Surface Transite Line (COP)
 Proposed 1.5' Excavation Extent	 Surface Line
 Fence	 Subsurface Water Line
	 Subsurface Oil Line

Source: Google Earth Imagery, 2022.




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**ZIA HILLS CR-1 TRANSFER LINE RELEASE
ALTERNATIVE CONFIRMATION SAMPLING PLAN**

PROJECT NO.:	212C-MD-02935
DATE:	MARCH 30, 2023
DESIGNED BY:	LMV
Figure No.	5B

TABLES

TABLE 1
 SUMMARY OF ANALYTICAL RESULTS
 SOIL ASSESSMENT- NAPP2231554934
 CONOCOPHILLIPS
 ZIA HILLS CR-1 TRANSFER LINE RELEASE
 LEA COUNTY, NM

19.15.29.12 NMAC Closure Criteria for Soils Impacted by a Release (≤ 50 ft):				Chlorides ¹		BTEX ²								TPH ³									
Sample ID	Sample Date	Sample Depth Interval	Field Screening Results Chlorides	< 600 mg/kg		< 10 mg/kg		Toluene		Ethylbenzene		Total Xylenes		< 50 mg/kg		GRO		DRO		EXT DRO		< 100 mg/kg	
				mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q
			ppm	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C ₆ -C ₁₀	Q	> C ₁₀ -C ₂₈	Q	> C ₂₈ -C ₃₆	Q	mg/kg	
AH-1	3/13/2023	0-1	4,070	2,300		0.099		0.211		0.262		2.49		3.06		594		9,950		1,620		12,164	
		1-1.5	4,330	2,300		<0.050		0.162		0.127		1.71		2.00		439		15,000		2,870		18,309	
AH-2	3/13/2023	0-1	1,100	752		<0.050		0.495		0.410		11.3		12.2		714		23,500		4,060		28,274	
		1-1.5	1,400	768		<0.050		0.082		0.116		1.49		1.68		194		11,300		2,190		13,684	
AH-3	3/13/2023	0-1	1,120	11,000		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		4,210		1,060		5,270	
AH-4	3/13/2023	0-1	1,100	368		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		259		72.7		331.7	
		1-1.5	1,100	640		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		278		58.6		336.6	
AH-5	3/13/2023	0-1	44	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		1-1.5	49	48.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-6	3/13/2023	0-1	825	336		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-7	3/13/2023	0-1	281	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-8	3/21/2023	0-1	-	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-9	3/13/2023	0-1	401	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-10	3/13/2023	0-1	365	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-11	3/13/2023	0-1	298	64.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-12	3/13/2023	0-1	341	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-13	3/13/2023	0-1	323	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-14	3/13/2023	0-1	367	96.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
T-1	3/23/2023	1.5-2	-	528		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	

NOTES:

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

Bold and italicized values indicate exceedance of Reclamation Requirements for soils above 4 feet bgs outside of oil and gas production.

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

APPENDIX A C-141 Forms

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	NAPP2231554934
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	ConocoPhillips Company	OGRID	217817
Contact Name	Charles Beauvais	Contact Telephone	(575) 988-2043
Contact email	Charles.R.Beauvais@ConocoPhillips.com	Incident # (assigned by OCD)	NAPP2231554934
Contact mailing address	2208 West Main St, Artesia, NM 88210		

Location of Release Source

Latitude 32.074946 Longitude -103.670778
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	County Road 1, PW Transfer line	Site Type	Flow Line
Date Release Discovered	October 29th, 2022	API# (if applicable)	

Unit Letter	Section	Township	Range	County
E	03	26S	32E	Lea

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 249	Volume Recovered (bbls) 20
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

3rd Party potentially cut the line. The responsible party at the time of this C-141 has not yet been identified COP is working with multiple groups to help identify the responsible party. COP is submitting the C-141 at this time to meet the two week initial report requirement, since some of the release constituents were released from the COP line that was cut.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2231554934
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release exceeded 25 bbls of Produced Water
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, initial notice was immediately given to the OCD on 10/30. By Charles Beauvais and Kalei Jennings to the Robert Hamlet BLM, Mike Bratcher BLM, ocd.enviro@emnrd.nm.gov, and EMNRD-OCD-District1spills@emnrd.nm.gov via email.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: Brittany N. Esparza	Title: Environmental Technician
Signature: 	Date: 11/11/2022
email: Brittany.Esparza@ConocoPhillips.com	Telephone: (432) 221-0398
<u>OCD Only</u>	
Received by: Jocelyn Harimon	Date: 11/14/2022

L48 Spill Volume Estimate Form - Fill In Gray Cells											
Facility Name & Well Number(s):				CR1 PW Transfer Line Release			Release Discovery Date & Time:			10/29/2022 Found 08:00 AM	
Provide any known details about the event:				Water transfer line was cut by 3rd party resulting in release. Unknown when line was cut and how much fluid was pumped in the line. Ops data provided indicates lines produces between 200 to 500 bbls per day. Cam to Plan Mapping.							
				Recovered Volume (bbl.) (if available, not included in volume calculations)	Method of Determination (dropdown)		Release Type (dropdown):		> 1/2" of Rain in Last 24 Hours (dropdown):	% Rainwater Recovered (not included in volume calculations, informational):	
BU:	Permian	Asset Area:	DBE - Asset Avg.	20	Field Measurement		Produced Water		No	0%	
Known Volume (dropdown):				No							
Known Area (dropdown):				Yes		Mapped Area (sq. ft.)	Average Depth (in.)	On/Off Pad	Soil Spilled-Fluid Saturation	Total Estimated Volume of Spill (bbl.)	
						21000	7	On-Pad	10.50%	228.95	

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS
 Action 158250

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 158250
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	11/14/2022

Incident ID	NAPP2231554934
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?	N/A _____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

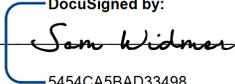
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	NAPP2231554934
District RP	
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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: Sam Widmer Title: Principal Program Manager
 Signature:  Date: Apr-21-2023
 email: 5454CA5BAD33498...sam.widmer@conocophillips.com Telephone: 281-206-5298

OCD Only

Received by: Jocelyn Harimon Date: 04/21/2023

Incident ID	NAPP2231554934
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: Sam Widmer Title: Principal Program Manager
 Signature:  Date: Apr-21-2023
 email: 5454CA5BAD33498... Sam.widmer@conocophillips.com Telephone: 281-206-5298

OCD Only

Received by: Jocelyn Harimon Date: 04/21/2023

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved
- See text box below - NV

Signature:  Date: 07/10/2023

Remediation Plan is approved on the following conditions:

1. OCD pre-approval will be required for any application of a microbial strain to any visually impacted rocks if encountered. Material data sheet of the microbial strain will need to be provided.
2. Variance to increase sampling area size for each 5 point composite sample per 400 square feet is approved.
3. ConocoPhillips has 90-days (Remediation Due date: 10/10/2023) to submit a final closure report or time extension request along with furnishing an update-to-date status of the remediation being conducted.

Incident ID	NAPP2231554934
District RP	
Facility ID	
Application ID	

Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX B

Regulatory Correspondence

From: [Nobui, Jennifer, EMNRD](#)
To: [Lull, Christian](#)
Cc: [Bratcher, Michael, EMNRD](#); [Hamlet, Robert, EMNRD](#); [Harimon, Jocelyn, EMNRD](#)
Subject: RE: [EXTERNAL] (Extension Request 1) NAPP2231554934 - Zia Hills - CR-1 Transfer Line Release
Date: Tuesday, January 31, 2023 5:05:24 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

You don't often get email from jennifer.nobui@emnrd.nm.gov. [Learn why this is important](#)

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hello Christian

OCD approves your request for a 90-day extension to 04/27/2023 to submit a remediation plan. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,
Jennifer Nobui

From: Lull, Christian <Christian.Llull@tetrattech.com>
Sent: Tuesday, January 31, 2023 3:44 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Subject: [EXTERNAL] (Extension Request 1) NAPP2231554934 - Zia Hills - CR-1 Transfer Line Release

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

To whom it may concern:

On behalf of ConocoPhillips, Tetra Tech is requesting a 90-day extension (until April 27, 2023) to complete the release characterization and associated reporting for the Zia Hills - CR-1 Transfer Line Release site (**NAPP2231554934**).

According to the State of New Mexico Form C-141 Initial Report, the release was discovered on October 29, 2022. The cause of the release was noted as resulting from a "3rd party potentially cut the line," and the responsible party at the time of the C-141 had not been identified. Approximately 249 bbls of produced water were reported released, of which 20 bbls were recovered. These volumes are estimates. The New Mexico Oil Conservation District (NMOCD) received this initial Form C-141 on November 11, 2022, and subsequently assigned the release the Incident ID NAPP2231554934.

From investigation, an unidentified operator was indeed cutting other non-COP surface flowlines in the vicinity of the water transfer line and inadvertently severed the COP line. ConocoPhillips has taken measures to pinpoint the 3rd party but has been unsuccessful in identifying the operator. COP is willing to conduct release assessment at the project site, however additional time is required to complete the assessment activities.

The requested 90-day extension will allow for release characterization to be conducted at the Site. Once the sampling data is collected, tabulated, and evaluated, a remediation work plan will be submitted to the NMOCD.

Thank you in advance.

Christian Llull, P.G. | Program Manager

Direct +1 (512) 338-2861 | Business +1 (512) 338-1667 | Fax +1 (512) 338-1331 | christian.llull@tetrattech.com

Tetra Tech | *Leading with Science*[®] | OGA

8911 N. Capital of Texas Highway | Bldg. 2, Suite 2310 | Austin, TX 78759 | tetrattech.com

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APPENDIX C

Site Characterization Data



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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04549 POD1	CUB	LE		1	1	1	11	26S	32E	627111	3548316	2043	0	0	0
C 04485 POD1	CUB	LE		4	1	1	12	26S	32E	629039	3548125	3842	55		
C 04209 POD1	CUB	LE		2	3	3	06	26S	32E	620903	3548619	4641	360	155	205
C 04209 POD2	C	LE		2	3	3	06	26S	32E	620818	3548657	4718	340	155	185
C 03829 POD1	CUB	LE		3	3	1	06	26S	32E	620628	3549186	4840	646	350	296
C 03554 POD1	CUB	ED		2	1	4	01	26S	31E	620547	3549148	4923	630	300	330

Average Depth to Water: **192 feet**
 Minimum Depth: **0 feet**
 Maximum Depth: **350 feet**

Record Count: 6

UTMNAD83 Radius Search (in meters):

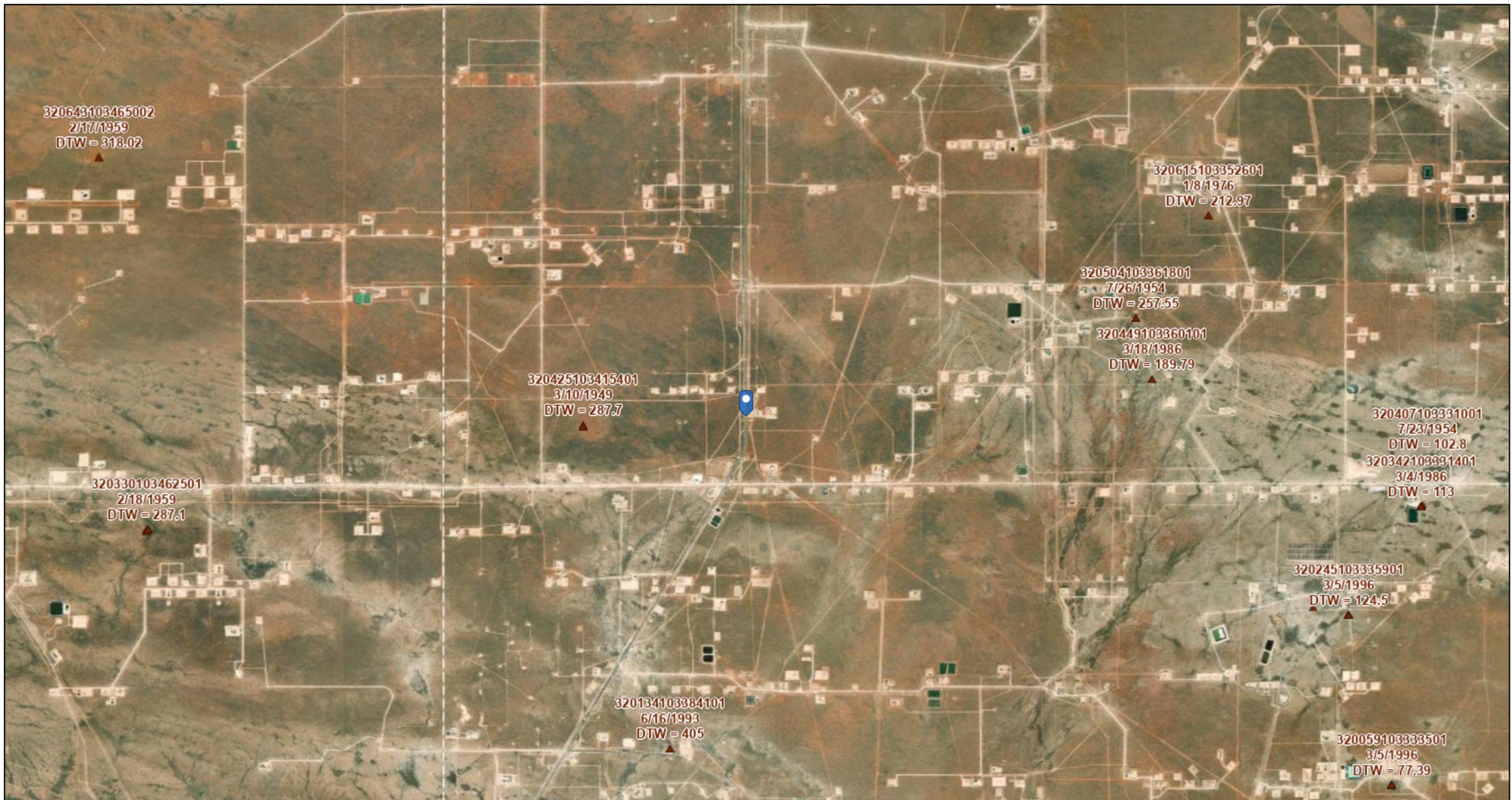
Easting (X): 625457.28

Northing (Y): 3549516.27

Radius: 5000

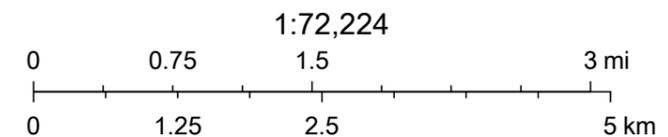
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

USGS Groundwater Wells



1/19/2023, 8:20:24 AM

▲ USGS Historical GW Wells



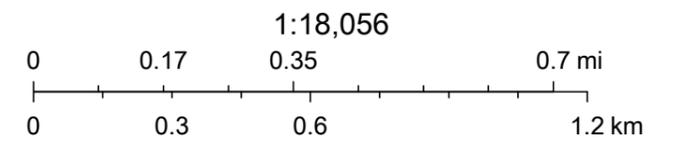
Esri, HERE, Garmin, Earthstar Geographics, USGS

OCD Karst Potential Map



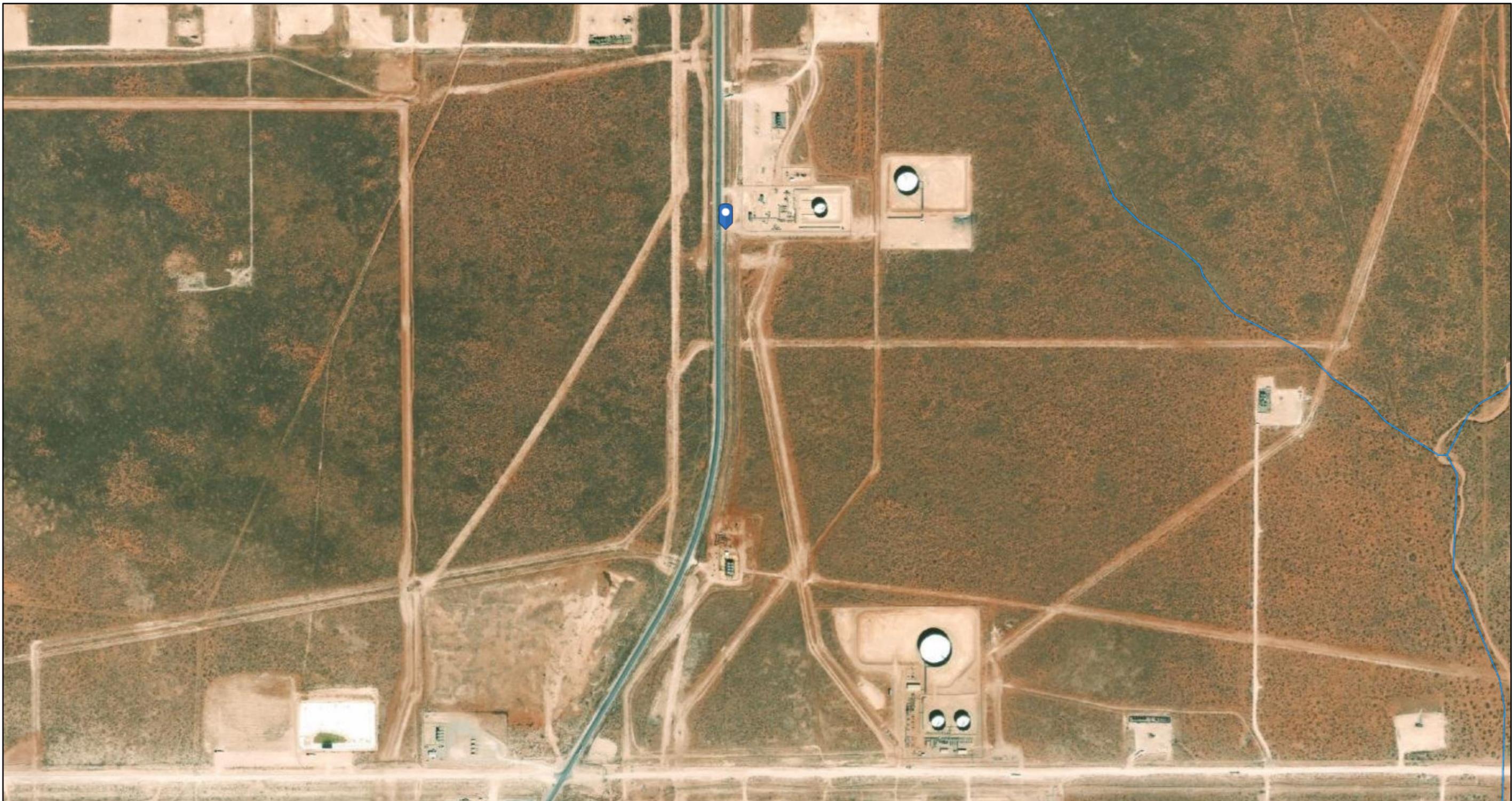
1/19/2023, 8:17:00 AM
Karst Occurrence Potential

- Medium
- Low



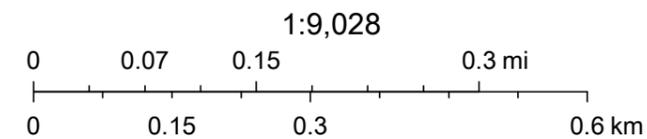
BLM, OCD, New Mexico Tech, Esri, HERE, Garmin, iPC, Maxar

OCD Waterbodies Map



1/19/2023, 8:13:23 AM

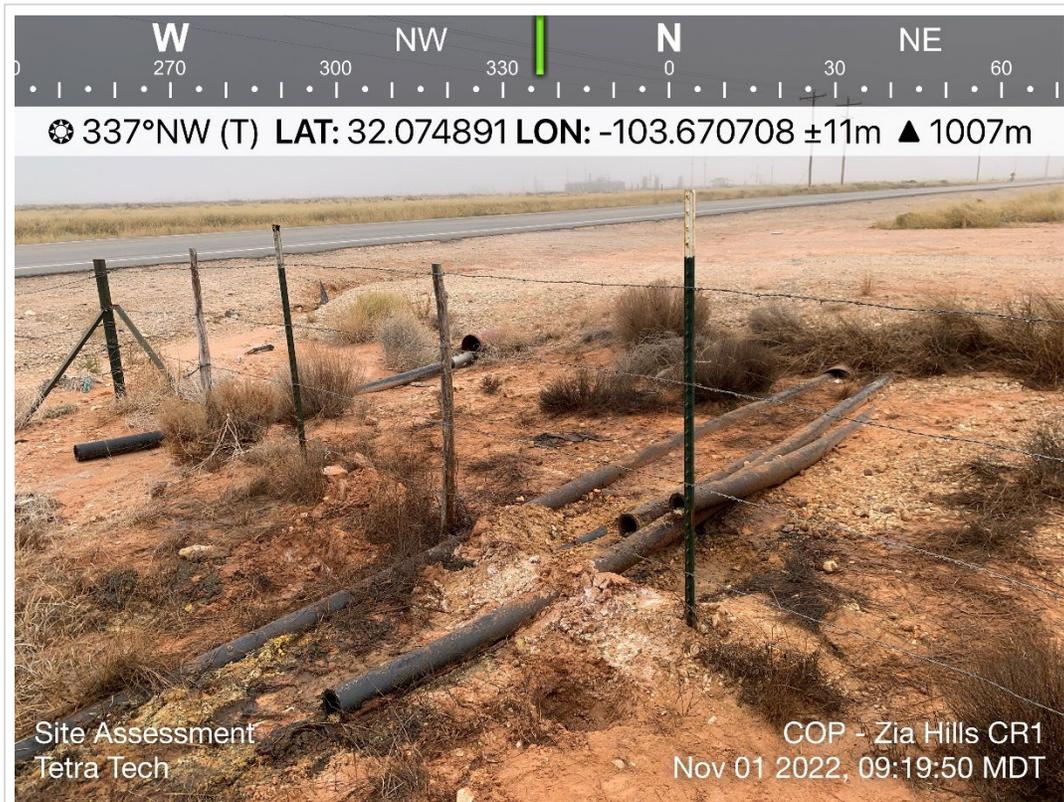
— OSE Streams



Esri, HERE, Garmin, IPC, Maxar, NM OSE

APPENDIX D

Photographic Documentation



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View north-northwest of approximate release point. Northern point of release with accessibility if southern point is not accessible.	1
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south of approximate release point. View of surface lines with down gradient slope. Staining is apparent.	2
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south of release. Large amount	3
	SITE NAME	Zia Hills CR-1 Transfer Line Release	10/30/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south-southeast moving south of release. Surface lines are visibly damaged with staining and pooling.	4
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View north-northeast. Large amount of staining visible. Green panel accessibility to the east.	5
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south-southeast. Green panel accessibility included in a large portion of the fence line. DCP gas line signage.	6
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View east of DCP gas line signage. Line will need to be padded for entrance to the northern portion of release extent.	7
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south-southeast. Surface lines visible with large amounts staining and erosion visible.	8
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View north of southern portion of release extent. Large amounts of pooling is visible. Green panel accessibility no longer visible.	9
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south-southwest of surface lines continuing south. Temporary fence line ends and connects to fence line on main road	10
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south of 3 parallel surface lines. Release extent continues south to the right of the 3 surface lines towards the fence.	11
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south-southeast. Southern quadrant of release extent. Reduction in staining and pooling. High accessibility.	12
	SITE NAME	Zia Hills CR-1 Transfer Line Release	11/1/2022



TETRA TECH, INC. PROJECT NO. 212C-MD-02935	DESCRIPTION	View south of surface lines inside release extent. Most significant coordinates of staining.	13
	SITE NAME	Zia Hills CR-1 Transfer Line Release	10/30/2022

APPENDIX E

Laboratory Analytical Data



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

March 23, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ZIA HILLS CR-1 TRANSFER LINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 03/14/23 16:39.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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



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

Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH - 1 (0-1')	H231172-01	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 1 (1-1.5')	H231172-02	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 2 (0-1')	H231172-03	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 2 (1-1.5')	H231172-04	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 3 (0-1')	H231172-05	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 4 (0-1')	H231172-06	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 4 (1-1.5')	H231172-07	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 5 (0-1')	H231172-08	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 5 (1-1.5')	H231172-09	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 6 (0-1')	H231172-10	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 7 (0-1')	H231172-11	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 9 (0-1')	H231172-13	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 10 (0-1')	H231172-14	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 11 (0-1')	H231172-15	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 12 (0-1')	H231172-16	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 13 (0-1')	H231172-17	Soil	13-Mar-23 00:00	14-Mar-23 16:39
AH - 14 (0-1')	H231172-18	Soil	13-Mar-23 00:00	14-Mar-23 16:39

03/23/23 - Client changed the sample depths on -02, -04, -07 and -09 (see COC). This is the revised report and will replace the one sent on 03/20/23.

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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 1 (0-1')
H231172-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	2300		16.0	mg/kg	4	3031517	GM	15-Mar-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

S-04

Benzene*	0.099		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Toluene*	0.211		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Ethylbenzene*	0.262		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total Xylenes*	2.49		0.150	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total BTEX	3.06		0.300	mg/kg	50	3031504	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			152 %	71.5-134		3031504	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

S-04

GRO C6-C10*	594		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
DRO >C10-C28*	9950		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	1620		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			139 %	48.2-134		3031507	MS	15-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			249 %	49.1-148		3031507	MS	15-Mar-23	8015B	
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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 1 (1-1.5')

H231172-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	2330		16.0	mg/kg	4	3031517	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Toluene*	0.162		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Ethylbenzene*	0.127		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total Xylenes*	1.71		0.150	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total BTEX	2.00		0.300	mg/kg	50	3031504	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			110 %	71.5-134		3031504	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

S-06

GRO C6-C10*	439		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	
DRO >C10-C28*	15000		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	
EXT DRO >C28-C36	2870		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	

Surrogate: 1-Chlorooctane			177 %	48.2-134		3031507	MS	16-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			428 %	49.1-148		3031507	MS	16-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 2 (0-1')
H231172-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	752		16.0	mg/kg	4	3031517	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Toluene*	0.495		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Ethylbenzene*	0.410		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total Xylenes*	11.3		0.150	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total BTEX	12.2		0.300	mg/kg	50	3031504	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			118 %	71.5-134		3031504	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

S-06

GRO C6-C10*	714		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	
DRO >C10-C28*	23500		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	
EXT DRO >C28-C36	4060		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			281 %	48.2-134		3031507	MS	16-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			694 %	49.1-148		3031507	MS	16-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 2 (1-1.5')

H231172-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	768		16.0	mg/kg	4	3031517	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Toluene*	0.082		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Ethylbenzene*	0.116		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total Xylenes*	1.49		0.150	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total BTEX	1.68		0.300	mg/kg	50	3031504	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			107 %	71.5-134		3031504	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

S-06

GRO C6-C10*	194		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	
DRO >C10-C28*	11300		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	
EXT DRO >C28-C36	2190		100	mg/kg	10	3031507	MS	16-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			134 %	48.2-134		3031507	MS	16-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			367 %	49.1-148		3031507	MS	16-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 3 (0-1')
H231172-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	11000		16.0	mg/kg	4	3031517	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031504	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			104 %	71.5-134		3031504	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

S-04

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
DRO >C10-C28*	4210		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	1060		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			104 %	48.2-134		3031507	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			170 %	49.1-148		3031507	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 4 (0-1')
H231172-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	368		16.0	mg/kg	4	3031517	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031504	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031504	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			107 %	71.5-134		3031504	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
DRO >C10-C28*	259		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	72.7		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			103 %	48.2-134		3031507	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			125 %	49.1-148		3031507	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 4 (1-1.5')

H231172-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	640		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	QM-07
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 133 % 71.5-134 3031505 JH/ 16-Mar-23 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
DRO >C10-C28*	278		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	58.6		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane 102 % 48.2-134 3031507 MS 15-Mar-23 8015B

Surrogate: 1-Chlorooctadecane 122 % 49.1-148 3031507 MS 15-Mar-23 8015B

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 5 (0-1')
H231172-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	3032025	GM	20-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031717	JH/	17-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031717	JH/	17-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031717	JH/	17-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031717	JH/	17-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031717	JH/	17-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			103 %	71.5-134		3031717	JH/	17-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031715	MS	17-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031715	MS	17-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031715	MS	17-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			106 %	48.2-134		3031715	MS	17-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			118 %	49.1-148		3031715	MS	17-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 5 (1-1.5')

H231172-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	48.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			126 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031507	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			101 %	48.2-134		3031507	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			117 %	49.1-148		3031507	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 6 (0-1')
H231172-10 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	336		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			128 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			116 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			124 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 7 (0-1')
H231172-11 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			123 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			105 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			110 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 9 (0-1')
H231172-13 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			128 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			101 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			104 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 10 (0-1')

H231172-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			127 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			113 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			118 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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**AH - 11 (0-1')
H231172-15 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	64.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			118 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			104 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			110 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 12 (0-1')

H231172-16 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			121 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

<i>Surrogate: 1-Chlorooctane</i>			105 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			109 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 13 (0-1')

H231172-17 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	80.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			116 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			105 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			110 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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AH - 14 (0-1')

H231172-18 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	96.0		16.0	mg/kg	4	3031518	GM	15-Mar-23	4500-CI-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3031505	JH/	16-Mar-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3031505	JH/	16-Mar-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			116 %	71.5-134		3031505	JH/	16-Mar-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3031509	MS	15-Mar-23	8015B	

Surrogate: 1-Chlorooctane			92.7 %	48.2-134		3031509	MS	15-Mar-23	8015B	
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Surrogate: 1-Chlorooctadecane			96.2 %	49.1-148		3031509	MS	15-Mar-23	8015B	
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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3031517 - 1:4 DI Water

Blank (3031517-BLK1)		Prepared & Analyzed: 15-Mar-23								
Chloride	ND	16.0	mg/kg							
LCS (3031517-BS1)		Prepared & Analyzed: 15-Mar-23								
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (3031517-BSD1)		Prepared & Analyzed: 15-Mar-23								
Chloride	400	16.0	mg/kg	400		100	80-120	0.00	20	

Batch 3031518 - 1:4 DI Water

Blank (3031518-BLK1)		Prepared & Analyzed: 15-Mar-23								
Chloride	ND	16.0	mg/kg							
LCS (3031518-BS1)		Prepared & Analyzed: 15-Mar-23								
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (3031518-BSD1)		Prepared & Analyzed: 15-Mar-23								
Chloride	400	16.0	mg/kg	400		100	80-120	0.00	20	

Batch 3032025 - 1:4 DI Water

Blank (3032025-BLK1)		Prepared & Analyzed: 20-Mar-23								
Chloride	ND	16.0	mg/kg							
LCS (3032025-BS1)		Prepared & Analyzed: 20-Mar-23								
Chloride	432	16.0	mg/kg	400		108	80-120			

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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3032025 - 1:4 DI Water

LCS Dup (3032025-BSD1)

Prepared & Analyzed: 20-Mar-23

Chloride	416	16.0	mg/kg	400		104	80-120	3.77	20	
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Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: ZIA HILLS CR-1 TRANSFER LINE RI
Project Number: 212C - MD - 02935
Project Manager: CHRISTIAN LLULL
Fax To: (432) 682-3946

Reported:
23-Mar-23 18:29

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3031504 - Volatiles**Blank (3031504-BLK1)**

Prepared & Analyzed: 15-Mar-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0524		mg/kg	0.0500		105	71.5-134			

LCS (3031504-BS1)

Prepared & Analyzed: 15-Mar-23

Benzene	2.04	0.050	mg/kg	2.00		102	81.4-118			
Toluene	2.05	0.050	mg/kg	2.00		103	88.7-121			
Ethylbenzene	2.02	0.050	mg/kg	2.00		101	86.1-120			
m,p-Xylene	4.14	0.100	mg/kg	4.00		104	88.2-124			
o-Xylene	2.02	0.050	mg/kg	2.00		101	84.9-118			
Total Xylenes	6.16	0.150	mg/kg	6.00		103	87.3-122			
Surrogate: 4-Bromofluorobenzene (PID)	0.0488		mg/kg	0.0500		97.7	71.5-134			

LCS Dup (3031504-BSD1)

Prepared & Analyzed: 15-Mar-23

Benzene	2.02	0.050	mg/kg	2.00		101	81.4-118	1.08	15.8	
Toluene	2.03	0.050	mg/kg	2.00		102	88.7-121	1.01	15.9	
Ethylbenzene	2.01	0.050	mg/kg	2.00		100	86.1-120	0.571	16	
m,p-Xylene	4.09	0.100	mg/kg	4.00		102	88.2-124	1.10	16.2	
o-Xylene	1.97	0.050	mg/kg	2.00		98.6	84.9-118	2.14	16.7	
Total Xylenes	6.07	0.150	mg/kg	6.00		101	87.3-122	1.44	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0479		mg/kg	0.0500		95.9	71.5-134			

Batch 3031505 - Volatiles**Blank (3031505-BLK1)**

Prepared: 15-Mar-23 Analyzed: 16-Mar-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

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Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: ZIA HILLS CR-1 TRANSFER LINE RI
Project Number: 212C - MD - 02935
Project Manager: CHRISTIAN LLULL
Fax To: (432) 682-3946

Reported:
23-Mar-23 18:29

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3031505 - Volatiles**Blank (3031505-BLK1)**

Prepared: 15-Mar-23 Analyzed: 16-Mar-23

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0655		mg/kg	0.0500		131	71.5-134			

LCS (3031505-BS1)

Prepared: 15-Mar-23 Analyzed: 16-Mar-23

Benzene	1.77	0.050	mg/kg	2.00		88.7	81.4-118			
Toluene	1.77	0.050	mg/kg	2.00		88.7	88.7-121			
Ethylbenzene	1.80	0.050	mg/kg	2.00		90.2	86.1-120			
m,p-Xylene	3.86	0.100	mg/kg	4.00		96.5	88.2-124			
o-Xylene	1.80	0.050	mg/kg	2.00		90.1	84.9-118			
Total Xylenes	5.66	0.150	mg/kg	6.00		94.4	87.3-122			
Surrogate: 4-Bromofluorobenzene (PID)	0.0656		mg/kg	0.0500		131	71.5-134			

LCS Dup (3031505-BSD1)

Prepared: 15-Mar-23 Analyzed: 16-Mar-23

Benzene	2.18	0.050	mg/kg	2.00		109	81.4-118	20.3	15.8	QR-04
Toluene	2.13	0.050	mg/kg	2.00		107	88.7-121	18.4	15.9	QR-04
Ethylbenzene	2.15	0.050	mg/kg	2.00		107	86.1-120	17.5	16	QR-04
m,p-Xylene	4.59	0.100	mg/kg	4.00		115	88.2-124	17.4	16.2	QR-04
o-Xylene	2.13	0.050	mg/kg	2.00		106	84.9-118	16.7	16.7	
Total Xylenes	6.72	0.150	mg/kg	6.00		112	87.3-122	17.1	16.3	QR-04
Surrogate: 4-Bromofluorobenzene (PID)	0.0635		mg/kg	0.0500		127	71.5-134			

Batch 3031717 - Volatiles**Blank (3031717-BLK1)**

Prepared & Analyzed: 17-Mar-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0523		mg/kg	0.0500		105	71.5-134			

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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3031717 - Volatiles

LCS (3031717-BS1)

Prepared & Analyzed: 17-Mar-23

Benzene	1.96	0.050	mg/kg	2.00		98.2	81.4-118			
Toluene	1.94	0.050	mg/kg	2.00		97.2	88.7-121			
Ethylbenzene	1.93	0.050	mg/kg	2.00		96.3	86.1-120			
m,p-Xylene	3.93	0.100	mg/kg	4.00		98.3	88.2-124			
o-Xylene	1.88	0.050	mg/kg	2.00		94.0	84.9-118			
Total Xylenes	5.81	0.150	mg/kg	6.00		96.9	87.3-122			

Surrogate: 4-Bromofluorobenzene (PID)

0.0486

mg/kg

0.0500

97.2

71.5-134

LCS Dup (3031717-BSD1)

Prepared & Analyzed: 17-Mar-23

Benzene	2.02	0.050	mg/kg	2.00		101	81.4-118	2.98	15.8	
Toluene	2.04	0.050	mg/kg	2.00		102	88.7-121	4.83	15.9	
Ethylbenzene	2.01	0.050	mg/kg	2.00		101	86.1-120	4.33	16	
m,p-Xylene	4.09	0.100	mg/kg	4.00		102	88.2-124	3.97	16.2	
o-Xylene	1.95	0.050	mg/kg	2.00		97.7	84.9-118	3.87	16.7	
Total Xylenes	6.05	0.150	mg/kg	6.00		101	87.3-122	3.94	16.3	

Surrogate: 4-Bromofluorobenzene (PID)

0.0487

mg/kg

0.0500

97.3

71.5-134

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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3031507 - General Prep - Organics

Blank (3031507-BLK1)		Prepared & Analyzed: 15-Mar-23								
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	43.8		mg/kg	50.0		87.6	48.2-134			
Surrogate: 1-Chlorooctadecane	47.4		mg/kg	50.0		94.7	49.1-148			

LCS (3031507-BS1)		Prepared & Analyzed: 15-Mar-23								
GRO C6-C10	166	10.0	mg/kg	200		82.8	78.5-124			
DRO >C10-C28	165	10.0	mg/kg	200		82.7	72.5-126			
Total TPH C6-C28	331	10.0	mg/kg	400		82.8	77.6-123			
Surrogate: 1-Chlorooctane	46.2		mg/kg	50.0		92.5	48.2-134			
Surrogate: 1-Chlorooctadecane	48.6		mg/kg	50.0		97.2	49.1-148			

LCS Dup (3031507-BSD1)		Prepared & Analyzed: 15-Mar-23								
GRO C6-C10	169	10.0	mg/kg	200		84.3	78.5-124	1.78	17.7	
DRO >C10-C28	170	10.0	mg/kg	200		85.1	72.5-126	2.77	21	
Total TPH C6-C28	339	10.0	mg/kg	400		84.7	77.6-123	2.28	18.5	
Surrogate: 1-Chlorooctane	48.1		mg/kg	50.0		96.1	48.2-134			
Surrogate: 1-Chlorooctadecane	55.5		mg/kg	50.0		111	49.1-148			

Batch 3031509 - General Prep - Organics

Blank (3031509-BLK1)		Prepared & Analyzed: 15-Mar-23								
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	46.2		mg/kg	50.0		92.3	48.2-134			
Surrogate: 1-Chlorooctadecane	49.3		mg/kg	50.0		98.6	49.1-148			

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3031509 - General Prep - Organics

LCS (3031509-BS1)

Prepared & Analyzed: 15-Mar-23

GRO C6-C10	165	10.0	mg/kg	200		82.4	78.5-124			
DRO >C10-C28	160	10.0	mg/kg	200		80.2	72.5-126			
Total TPH C6-C28	325	10.0	mg/kg	400		81.3	77.6-123			
Surrogate: 1-Chlorooctane	49.0		mg/kg	50.0		97.9	48.2-134			
Surrogate: 1-Chlorooctadecane	50.0		mg/kg	50.0		99.9	49.1-148			

LCS Dup (3031509-BSD1)

Prepared & Analyzed: 15-Mar-23

GRO C6-C10	169	10.0	mg/kg	200		84.5	78.5-124	2.55	17.7	
DRO >C10-C28	170	10.0	mg/kg	200		85.0	72.5-126	5.79	21	
Total TPH C6-C28	339	10.0	mg/kg	400		84.7	77.6-123	4.16	18.5	
Surrogate: 1-Chlorooctane	50.4		mg/kg	50.0		101	48.2-134			
Surrogate: 1-Chlorooctadecane	55.4		mg/kg	50.0		111	49.1-148			

Batch 3031715 - General Prep - Organics

Blank (3031715-BLK1)

Prepared & Analyzed: 17-Mar-23

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	50.6		mg/kg	50.0		101	48.2-134			
Surrogate: 1-Chlorooctadecane	59.3		mg/kg	50.0		119	49.1-148			

LCS (3031715-BS1)

Prepared & Analyzed: 17-Mar-23

GRO C6-C10	184	10.0	mg/kg	200		92.2	78.5-124			
DRO >C10-C28	176	10.0	mg/kg	200		87.9	72.5-126			
Total TPH C6-C28	360	10.0	mg/kg	400		90.0	77.6-123			
Surrogate: 1-Chlorooctane	51.2		mg/kg	50.0		102	48.2-134			
Surrogate: 1-Chlorooctadecane	56.8		mg/kg	50.0		114	49.1-148			

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Analytical Results For:

TETRA TECH 901 WEST WALL STREET , STE 100 MIDLAND TX, 79701	Project: ZIA HILLS CR-1 TRANSFER LINE RI Project Number: 212C - MD - 02935 Project Manager: CHRISTIAN LLULL Fax To: (432) 682-3946	Reported: 23-Mar-23 18:29
---	---	------------------------------

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 3031715 - General Prep - Organics

LCS Dup (3031715-BSD1)

Prepared & Analyzed: 17-Mar-23

GRO C6-C10	178	10.0	mg/kg	200		89.2	78.5-124	3.24	17.7	
DRO >C10-C28	168	10.0	mg/kg	200		83.9	72.5-126	4.62	21	
Total TPH C6-C28	346	10.0	mg/kg	400		86.6	77.6-123	3.91	18.5	
Surrogate: 1-Chlorooctane	54.2		mg/kg	50.0		108	48.2-134			
Surrogate: 1-Chlorooctadecane	65.2		mg/kg	50.0		130	49.1-148			

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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04 The RPD for the BS/BSD was outside of historical limits.
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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

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

Client Name: COP Site Manager: Christian Llull
 Project Name: Zia Hills CR-1 Transfer Line Release (512) 565-0190
 christian.llull@tetratech.com
 Project Location: Lea County, NM Project #: 212C-MD-02935
 Invoice to: Attn. to Payroll - 901 W Wall Street, Ste 100
 Midland, Texas 79701
 Receiving Laboratory: Cardinal Labs Sampler Signature: Miguel A. Flores

ANALYSIS REQUEST (Circle or Specify Method No.)

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

Comments: * Customer requested Depth changes. TO. 3/23/23

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD			# CONTAINERS	FILTERED (Y/N)
		DATE	TIME	WATER	SOIL	HCL	HNO3	ICE		
1	AH-1 (0-1')	3/13/2023		X			X			
* 2	AH-1 (1-2') (1-1.5')	3/13/2023		X			X			
3	AH-2 (0-1')	3/13/2023		X			X			
* 4	AH-2 (1-2') (1-1.5')	3/13/2023		X			X			
5	AH-3 (0-1')	3/13/2023		X			X			
6	AH-4 (0-1')	3/13/2023		X			X			
* 7	AH-4 (1-2') (1-1.5')	3/13/2023		X			X			
8	AH-5 (0-1')	3/13/2023		X			X			
* 9	AH-5 (1-2') (1-1.5')	3/13/2023		X			X			
10	AH-6 (0-1')	3/13/2023		X			X			

Relinquished by: Miguel A Flores Date: Time:
 Relinquished by: [Signature] Date: Time:
 Relinquished by: [Signature] Date: Time:

Received by: [Signature] Date: 3/14/23 Time: 3:30
 Received by: [Signature] Date: 3/14/23 Time: 10:39
 Received by: [Signature] Date: Time:

LAB USE ONLY
 Sample Temperature: 34°C - 0.02
 28: #113

REMARKS: Standard TAT
 RUSH: Same Day 24 hr 48 hr 72 hr
 Rush Charges Authorized
 Special Report Limits or TRRP Report

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:



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

March 27, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ZIA HILLS CR-1 TRANSFER LINE RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 03/21/23 14:41.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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 accredited 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,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	03/21/2023	Sampling Date:	03/21/2023
Reported:	03/27/2023	Sampling Type:	Soil
Project Name:	ZIA HILLS CR-1 TRANSFER LINE RELEAS	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02935	Sample Received By:	Shalyn Rodriguez
Project Location:	COP - LEA COUNTY, NM		

Sample ID: AH - 8 (0-1') (H231276-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/23/2023	ND	2.07	104	2.00	1.21	
Toluene*	<0.050	0.050	03/23/2023	ND	2.09	105	2.00	1.97	
Ethylbenzene*	<0.050	0.050	03/23/2023	ND	2.18	109	2.00	1.18	
Total Xylenes*	<0.150	0.150	03/23/2023	ND	6.72	112	6.00	1.97	
Total BTEX	<0.300	0.300	03/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	03/23/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	03/23/2023	ND	167	83.6	200	3.16		
DRO >C10-C28*	<10.0	10.0	03/23/2023	ND	179	89.6	200	1.11		
EXT DRO >C28-C36	<10.0	10.0	03/23/2023	ND						

Surrogate: 1-Chlorooctane 140 % 48.2-134

Surrogate: 1-Chlorooctadecane 147 % 49.1-148

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* = Accredited Analyte

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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.
- 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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

APPENDIX F

BLM Seed Mixture Details

(25)

3 Seed Mixtures Currently Used for Ecological Sites

BLM SERIAL #:

COMPANY REFERENCE:

3.1 Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

BLM Serial #:

Company Reference:

3.2 Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed: Pounds of seed x percent purity x percent germination = pounds pure live seed

BLM SERIAL #:

COMPANY REFERENCE:

3.3 Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed: Pounds of seed x percent purity x percent germination = pounds pure live seed

BLM SERIAL #:

COMPANY REFERENCE:

3.4 Seed Mixture 3, for Shallow Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass (<i>Setaria magrostachya</i>)	1.0
Green Spangletop (<i>Leptochloa dubia</i>)	2.0
Side oats Grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed: Pounds of seed x percent purity x percent germination = pounds pure live seed

BLM SERIAL #:

COMPANY REFERENCE:

3.5 Seed Mixture 4, for Gypsum Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Alkali Sacaton (Sporobolus airoides)	1.0
DWS Four-wing saltbush (Atriplex canescens) (DWS: DeWinged Seed)	5.0

*Pounds of pure live seed: Pounds of seed x percent purity x percent germination = pounds pure live seed

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

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

CONDITIONS

Action 209793

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 209793
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvez	Remediation Plan is approved on the following conditions; 1. OCD pre-approval will be required for any application of a microbial strain to any visually impacted rocks if encountered. Material data sheet of the microbial strain will need to be provided. 2. Variance to increase sampling area size for each 5 point composite sample per 400 square feet is approved. 3. ConocoPhillips has 90-days (Remediation Due date: 10/10/2023) to submit a final closure report or time extension request along with furnishing an update-to-date status of the remediation being conducted.	7/10/2023