



November 29, 2023

District Supervisor
Oil Conservation Division, District 2
506 W. Texas Ave.
Artesia, New Mexico 88210

**Re: REVISED Release Characterization and Remediation Work Plan
Cuatro Hijos/Airstrip Fee Com 1H PW Flowline Release
ConocoPhillips (Heritage COG Operating LLC)
Lea County, New Mexico
DOR: 4/20/2023
INCIDENT ID NAPP2311541081
Approximate Release Point 32.661348° -103.488105°**

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips Company (ConocoPhillips) to assess a release that occurred from a flowline associated with Cuatro Hijos-Airstrip Fee Com 1H. The release footprint is located on private land in Public Land Survey System (PLSS) Unit Letter E, Section 17, Township 19 South, Range 35 East, in Lea County, New Mexico (Site). The approximate release point occurred at coordinates 32.661348°, -103.488105°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico C-141 Initial Report, the release occurred as the result of flowline corrosion and was discovered on April 20, 2023. The release consisted of approximately 52.4 barrels of produced water, and no volume was recovered. According to the C-141 and associated spill calculator, the release affected approximately 5,880 square feet of lease road, as indicated on Figure 3. The New Mexico Oil Conservation Division (NMOCD) received the C-141 report form for the release on April 25, 2023, and subsequently assigned the release Incident ID nAPP2311541081. The C-141 is included as Appendix A.

LAND OWNERSHIP

According to the NMOCD Oil and Gas Map, the site is located on Private land. Prior to assessment and remedial activities, the appropriate parties were contacted and informed of the work and the work was coordinated with the landowner.

SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, stream bodies, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is in an area of low karst potential.

According to the New Mexico Office of the State Engineers (NMOSE) reporting system, there are two (2) water wells within ½ mile (800 meters) of the Site. The minimum depth to groundwater based on the data from these wells is 80 feet below ground surface (bgs).

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As the available water level information is from data more than 25 years old, and depth to groundwater had not been adequately determined, COP elected to investigate the area for water wells. On October 25, 2023, ConocoPhillips personnel conducted a field inspection in the release vicinity to attempt to locate water wells within 0.5 miles of the release.

A presumed exempt stock water well was discovered 486 meters (approximately 1/3 mile) south of the release site. The well is located in undeveloped pastureland, along a two-track road leading to a stock tank. The well was gauged using a graduated steel cable and the depth to water measured was 74.03 below top of casing. Thus, depth to water in the area was determined to be deeper than 51 feet bgs. This depth to water measurement coincides with historical measurements from the area and surrounding wells. The stock water well coordinates are 32.656980°, -103.488630°, and the well location is indicated on Figure 5. The site characterization data is included in Appendix B. Photographic documentation of the stock water well location with is included in Appendix D.

REGULATORY FRAMEWORK

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

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

Constituent	Site RRALs
Chloride	10,000 mg/kg
TPH (GRO+DRO+ORO)	2,500 mg/kg
TPH (GRO+DRO)	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

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

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

SITE ASSESSMENT ACTIVITIES

Tetra Tech personnel were onsite to delineate and sample the release area on May 11, 2023. Initially, a total of eleven (11) soil borings (AH-1 through AH-11) were installed using a backhoe or a hand auger within and around the release area to evaluate the vertical and horizontal extent of the release. Boring locations AH-1 through AH-5 were installed within the release extent to assess the vertical extent of impact. The remainder of the borings were installed around the perimeter of the release footprint to delineate the horizontal extent of impacted soil. Hand auger refusal (dense subsurface lithology) was encountered at an approximate depth of 3-4 feet bgs at boring locations AH-2 through AH-5.

Tetra Tech personnel returned to the Site on June 5, 2023, to advance five (5) additional borings using an air rotary drill rig within the release footprint in order to complete vertical delineation of the release area. Boring BH-1 was advanced at the previously installed AH-1 boring location to a total depth of 25 feet bgs. Boring BH-2 was installed to a total depth of 10 feet bgs at a location between the previously installed AH-1 and AH-2 locations. Borings BH-3 and BH-4 were advanced at the previously installed AH-3 and AH-4 locations to total depths of 8 feet bgs each. Boring BH-5 was installed approximately 10 feet north of the

BH-1 location to a total depth of 5 feet bgs. Boring logs for borings BH-1 through BH-5 are included as Appendix C. Photographic documentation from the soil assessment activities is presented as Appendix D. The boring locations are presented in Figure 4.

A total of thirty-six (36) 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.

SITE ASSESSMENT RESULTS

Results from the May and June 2023 soil sampling events are summarized in Table 1. Analytical results associated with boring locations AH-1, AH-3 and AH-4 exceeded the chloride reclamation limit of 600 mg/kg in surface soils to 4 feet below surrounding grade. Additionally, results associated with the 8–9-foot bgs interval at AH-1 exceeded the chloride RRAL of 10,000 mg/kg. All other analytical results from the May and June 2023 sampling events were below Site RRALs and reclamation requirements. The release is fully delineated as a result of the soil assessment activities.

The assessment and delineation activities conducted revealed a complex subsurface lithology in the release footprint. There are significant changes in the subsurface conditions in the vicinity of the release. based on a review of boring logs and collected analytical results associated with the Site release characterization, a few patterns emerged:

1. The area of AH-1 is underlain by loose silty material, which allowed for deeper migration of released fluids in the area. However, the area of AH-2, AH-3, AH-4 and AH-5 is underlain by shallow, lithified caprock. Even with a backhoe, refusal was encountered at shallow depth at AH-2, AH-3, AH-4 and AH-5. However, during trenching at AH-1, the backhoe was able to advance to roughly 12-13 feet bgs.
2. As mentioned earlier in this report, a drilling rig was mobilized to the site to drill several locations based on either refusal or a need for additional vertical delineation. Boring location BH-5 was drilled a mere 10 feet north of the previous AH-1 trench location and encountered hard, dense material at approximately 3 feet bgs. Thus, the remedial action was designed to incorporate these subsurface lithological differences, and the deeper excavation is confined to only the area of AH-1. The excavation will proceed as outlined below and confirmation sidewall and floor samples will be collected to verify these assessment inferences.

NOVEMBER 2023 WORK PLAN

A Release Characterization and Remediation Work Plan (Work Plan) describing the assessment activities and results was prepared by Tetra Tech on behalf of ConocoPhillips and submitted to the NMOCD via the online fee portal on July 13, 2023.

The Work Plan was rejected by Nelson Velez of the NMOCD via email on October 6, 2023, with the following comments:

- *The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater. Remediation Due date to submit its revised workplan or final closure report is January 4, 2024.*

DEPTH TO GROUNDWATER DETERMINATION

As mentioned in the previous site characterization section and the OCD rejection, the available water level information is from data more than 25 years old, and depth to groundwater had not been adequately determined. Based on the rejection, ConocoPhillips personnel conducted a field inspection in the release vicinity on October 25, 2023, to attempt to locate water wells within 0.5 miles of the release extent.

A stock water well was discovered 486 meters (approximately 1/3 mile) south of the site. The well was gauged using a graduated steel cable and the depth to water measured was 74.03 below top of casing. Thus, depth to water was verified as deeper than 55 feet bgs and depth to groundwater is verified. The well coordinates are 32.656980°, -103.488630° and the well location is indicated on Figure 5. Photographic documentation of the stock water well is included in Appendix D.

REMEDIATION WORK PLAN

Based on the analytical results, ConocoPhillips proposes to remove the remaining impacted material as shown on Figure 5. Impacted soils in the vicinity of AH-1/BH-1 will be excavated using heavy equipment (backhoes, hoe rams, and track hoes) to a maximum depth of 9 feet below pre-release grade or until a representative sample from the walls and bottom of the excavation is below the applicable RRLs. Impacted soils in the vicinity of AH-3/BH-3 and AH-4/BH-4 will be excavated to a maximum depth of 4 feet bgs. Any area containing pressurized lines will be hand-dug to the proposed depth shown on Figure 6 or the maximum extent practicable; heavy equipment will come no more than 4 feet from any pressurized lines. The estimated volume of material to be remediated is approximately 725 cubic yards. Excavated soils will be transported offsite and disposed of at an NMOCD-approved or permitted facility.

In accordance with 19.15.29.12(D)(1)(c) NMAC, confirmation floor and sidewall samples will be collected for verification of remedial activities, and analyzed for TPH, BTEX, and chlorides. Prior to confirmation sampling the NMOCD district office will be notified via email in accordance with Subsection D of 19.15.29.12 NMAC. Once acceptable confirmation sample results are received, the excavation will be backfilled with clean material to pre-release grade.

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. Seven (7) confirmation floor samples and six (6) confirmation sidewall samples are proposed for verification of remedial activities. The proposed excavation encompasses a surface area of approximately 4,250 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 chloride, TPH, and BTEX.

SITE RECLAMATION AND RESTORATION PLAN

Once acceptable confirmation sample results are received, the excavation will be backfilled with clean material to pre-release grade. The pasture areas will be seeded to aid in revegetation. Based on the location of the Site, the NMSLO Loamy Sites Seed Mixture will be used for seeding and will be planted in the amount specified in the pound pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details in corresponding pound per live seed acre are included in Appendix F.

Release Characterization and Remediation Work Plan
November 29, 2023

ConocoPhillips

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) 560-9064.

Sincerely,
Tetra Tech, Inc.



Nicholas M. Poole
Project Manager



Christian M. Llull, P.G.
Program Manager

cc:
Mr. Jacob Laird, GPBU – ConocoPhillips
Mr. Ike Tavarez, RMR – ConocoPhillips

LIST OF ATTACHMENTS

Figures:

- Figure 1 – Overview Map
- Figure 2 – Topographic Map
- Figure 3 – Approximate Release Extent
- Figure 4 – Site Assessment Map
- Figure 5 – Depth to Water Determination (Livestock Water Well)
- Figure 6 – Proposed Remediation Map
- Figure 7 – Alternative Confirmation Sampling Plan

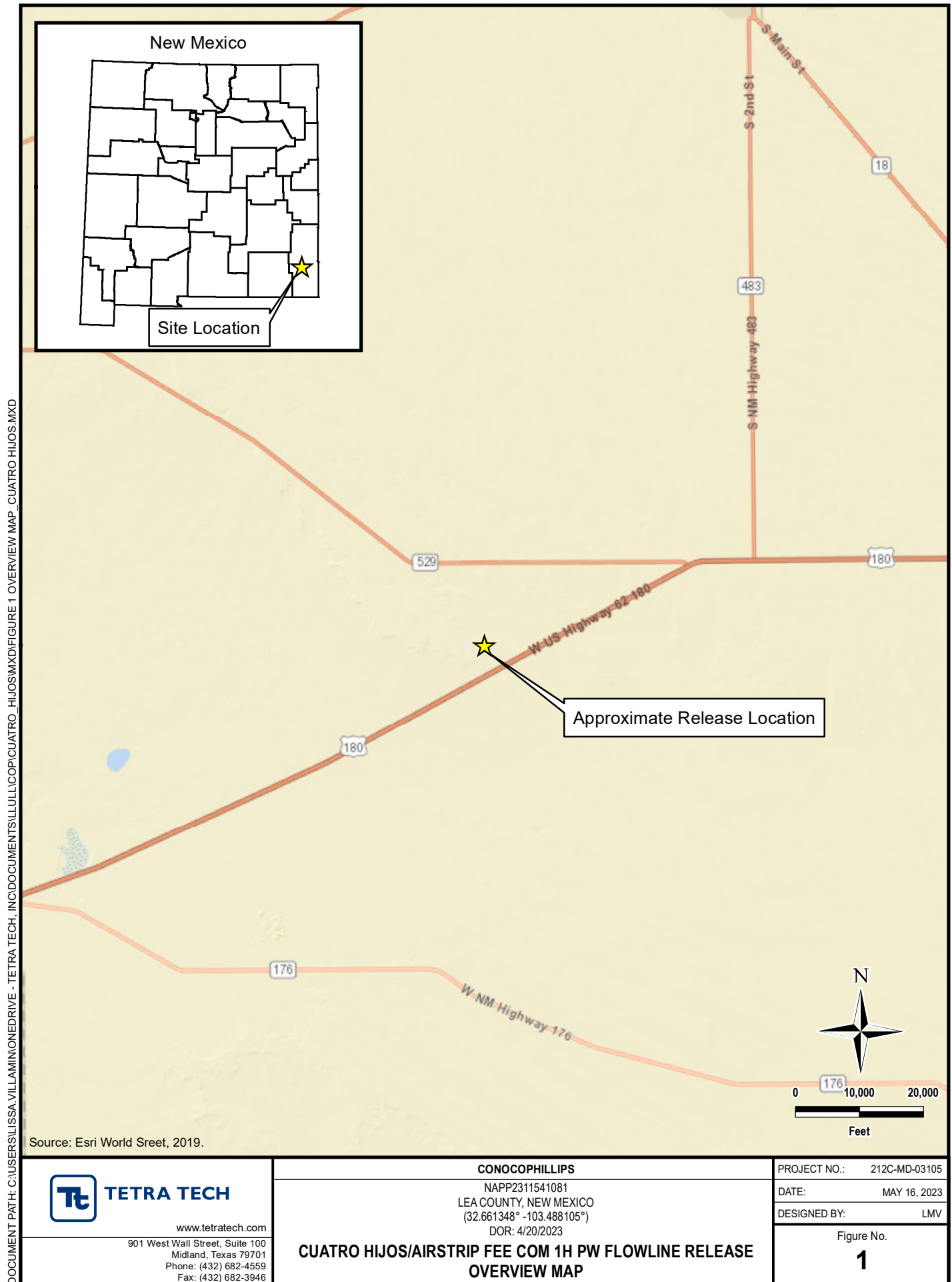
Tables:

- Table 1 – Summary of Analytical Results – Soil Assessment

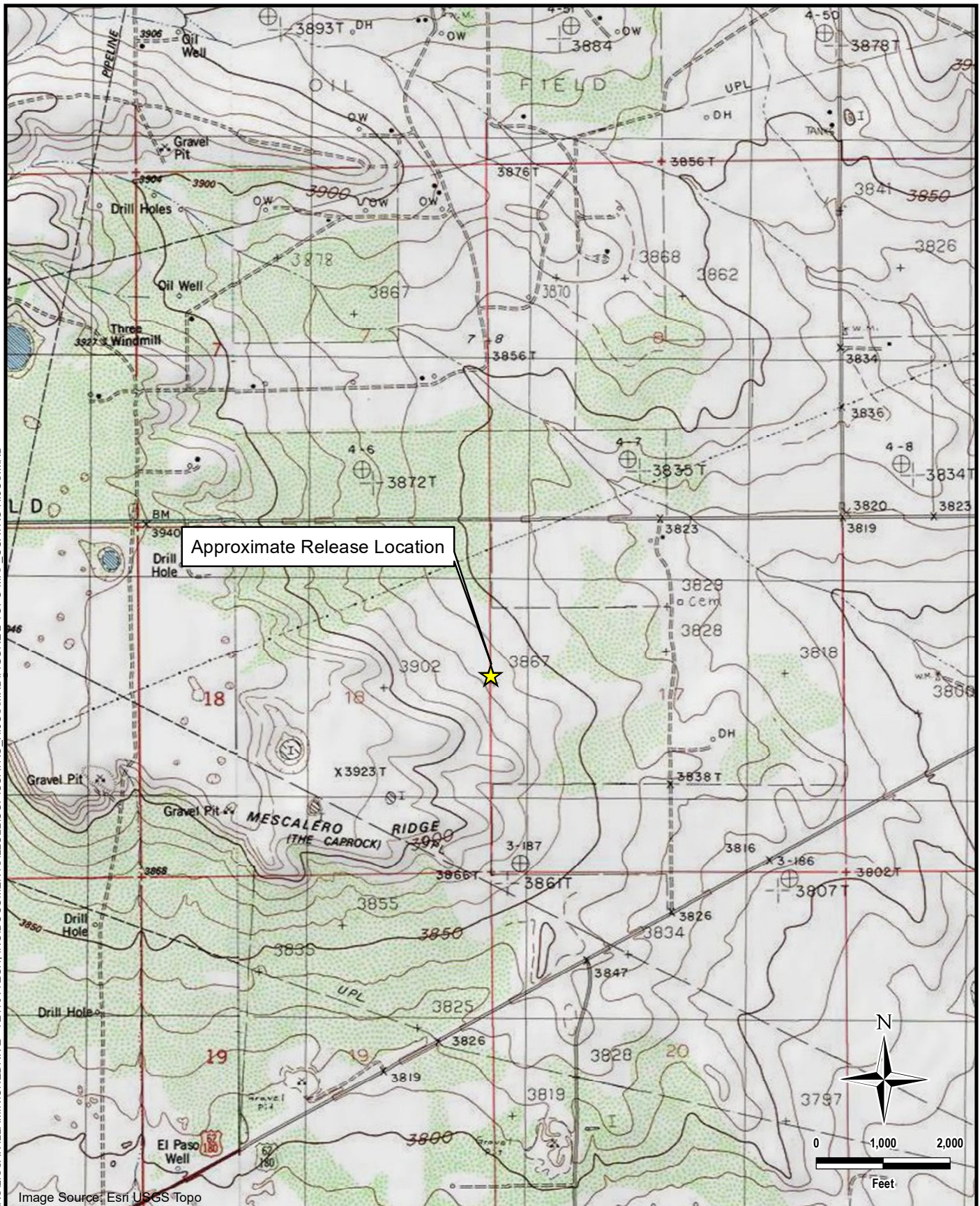
Appendices:

- Appendix A – C-141 Forms
- Appendix B – Site Characterization Data
- Appendix C – Boring Logs
- Appendix D – Photographic Documentation
- Appendix E – Analytical Data
- Appendix F – Seed Mixture Details

FIGURES



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**TETRA TECH**

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CONOCOPHILLIPS

NAPP2311541081
LEA COUNTY, NEW MEXICO
(32.661348° -103.488105°)
DOR: 4/20/2023

**CUATRO HIJOS/AIRSTRIIP FEE COM 1H PW FLOWLINE RELEASE
TOPOGRAPHIC MAP**

PROJECT NO.: 212C-MD-03105

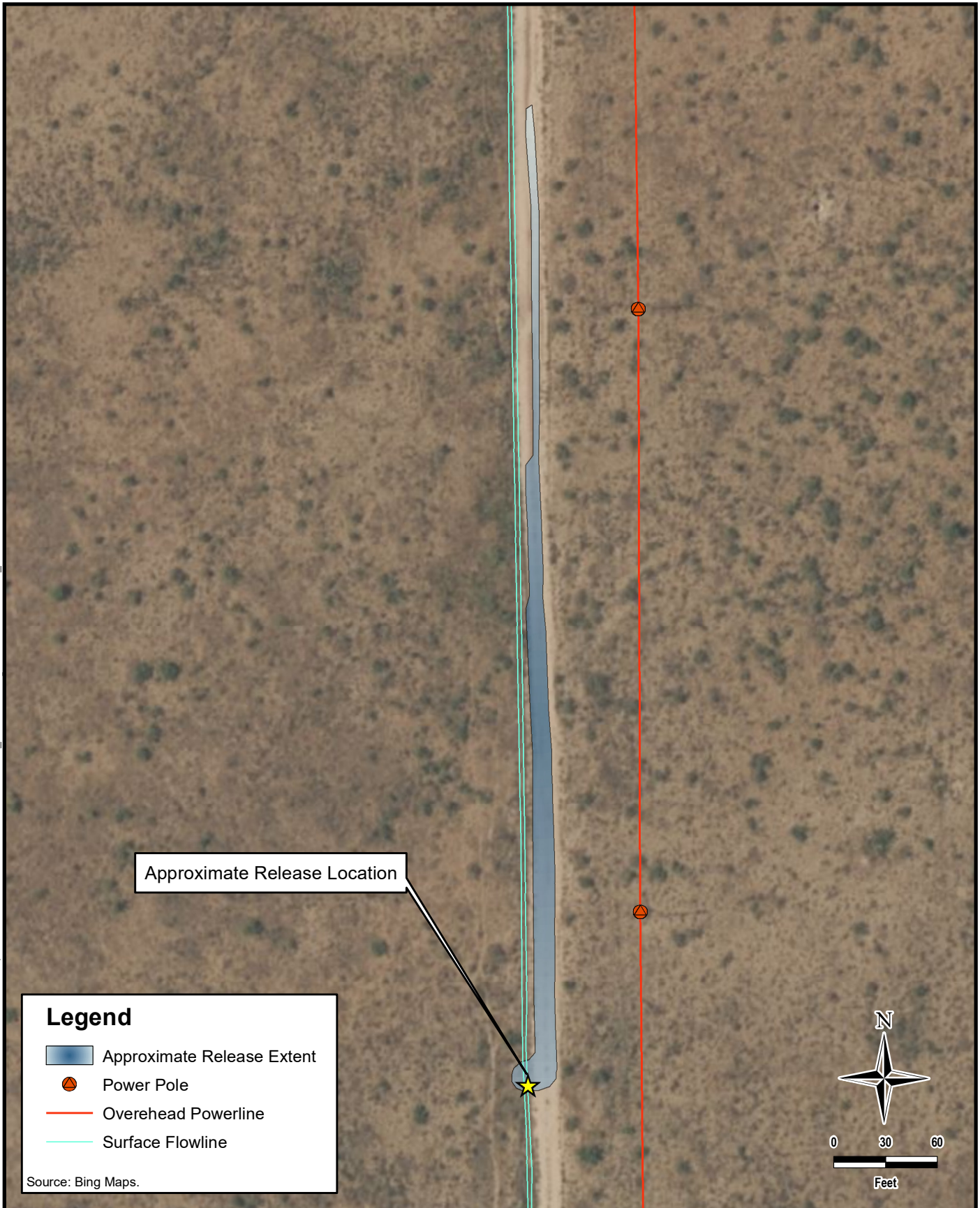
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Figure No.

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CONOCOPHILLIPS

NAPP2311541081
LEA COUNTY, NEW MEXICO
(32.661348° -103.488105°)
DOR: 4/20/2023

**CUATRO HIJOS/AIRSTRIIP FEE COM 1H PW FLOWLINE RELEASE
APPROXIMATE RELEASE EXTENT**

PROJECT NO.: 212C-MD-03105

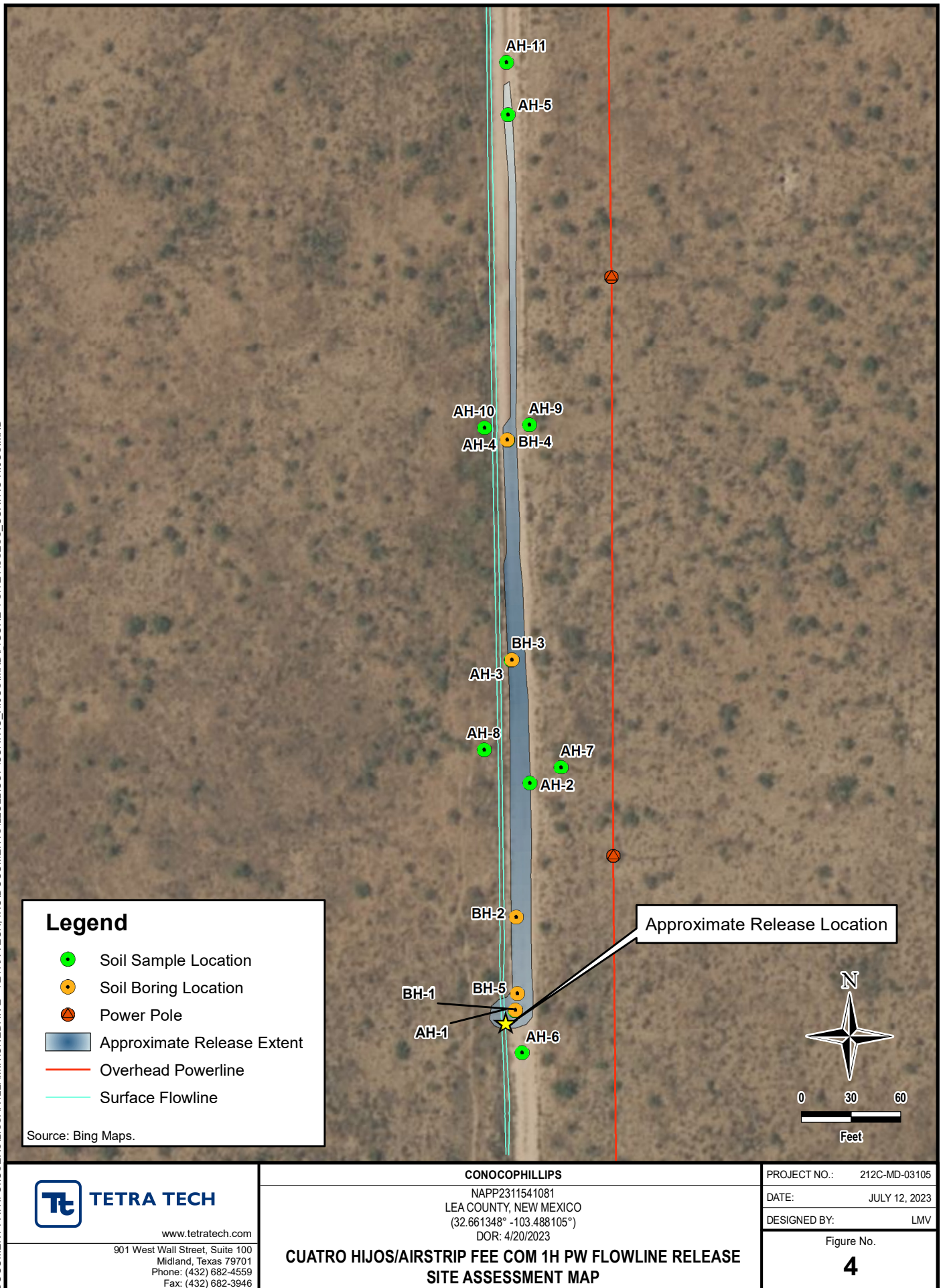
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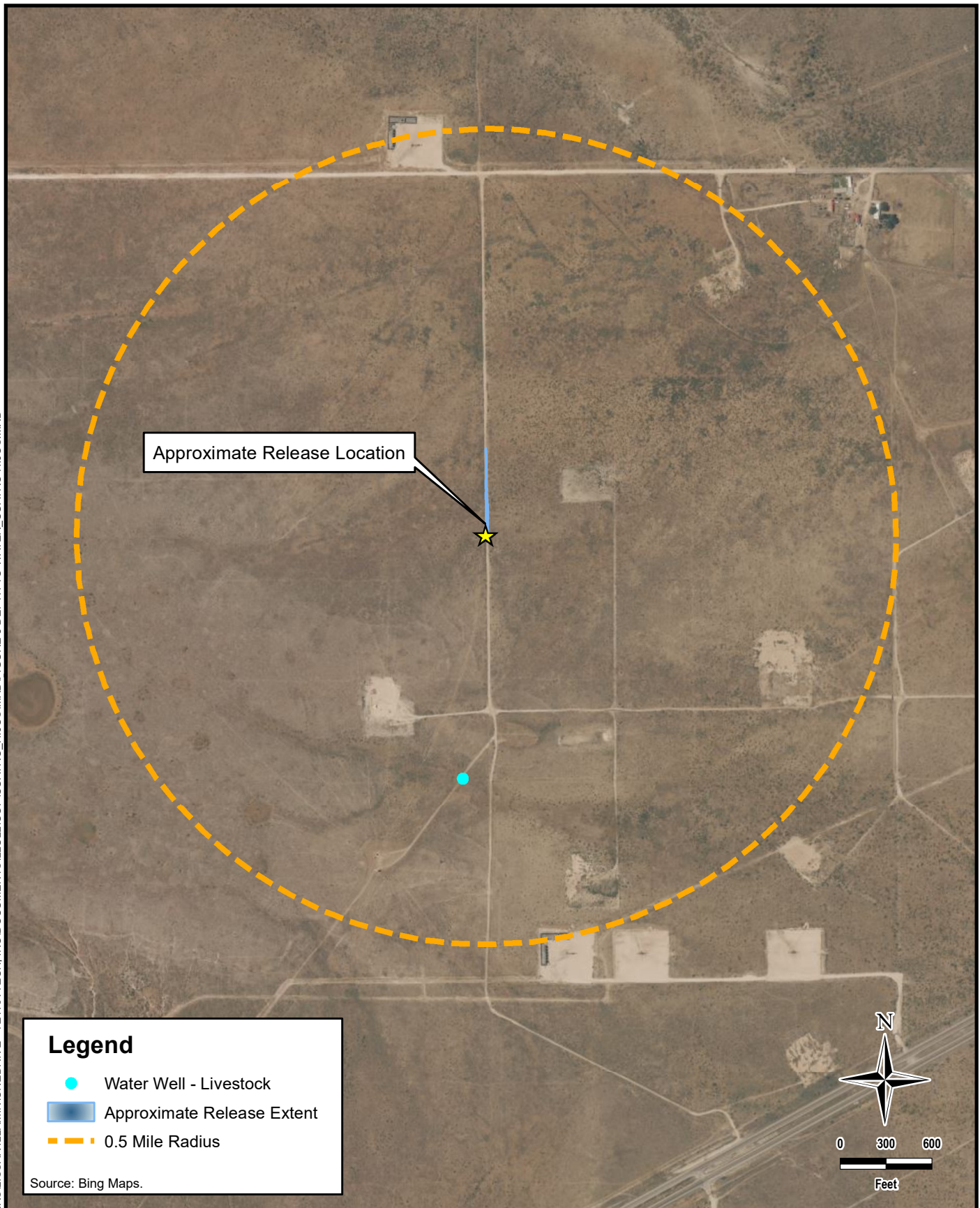
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DOCUMENT PATH: C:\USERS\LISSA.VILLAMINIONEDRIVE - TETRA TECH\INC\DOCUMENTS\ILLU\COPI\CUATRO_HIJOS\MXD\FIGURE 4 SITE ASSESS_CUATRO_HIJOS.MXD



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CONOCOPHILLIPS

NAPP2311541081
LEA COUNTY, NEW MEXICO
(32.661348° -103.488105°)
DOR: 4/20/2023

**CUATRO HIJOS/AIRSTRIIP FEE COM 1H PW FLOWLINE RELEASE
DEPTH TO WATER DETERMINATION LIVESTOCK WATER WELL**

PROJECT NO.: 212C-MD-03105

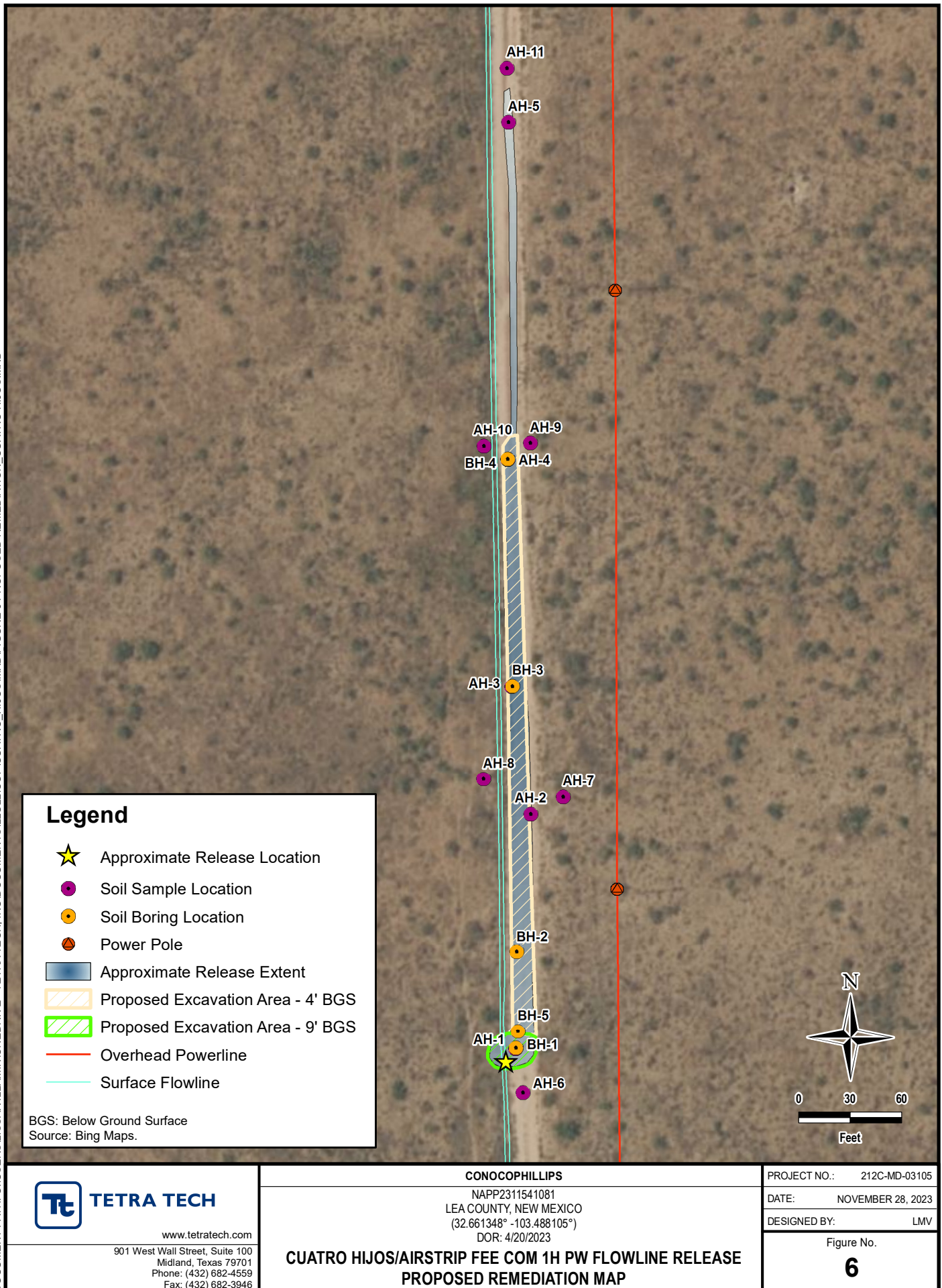
DATE: NOVEMBER 28, 2023

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Figure No.

5

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CONOCOPHILLIPS

NAPP2311541081
LEA COUNTY, NEW MEXICO
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DOR: 4/20/2023

PROJECT NO.: 212C-MD-03105

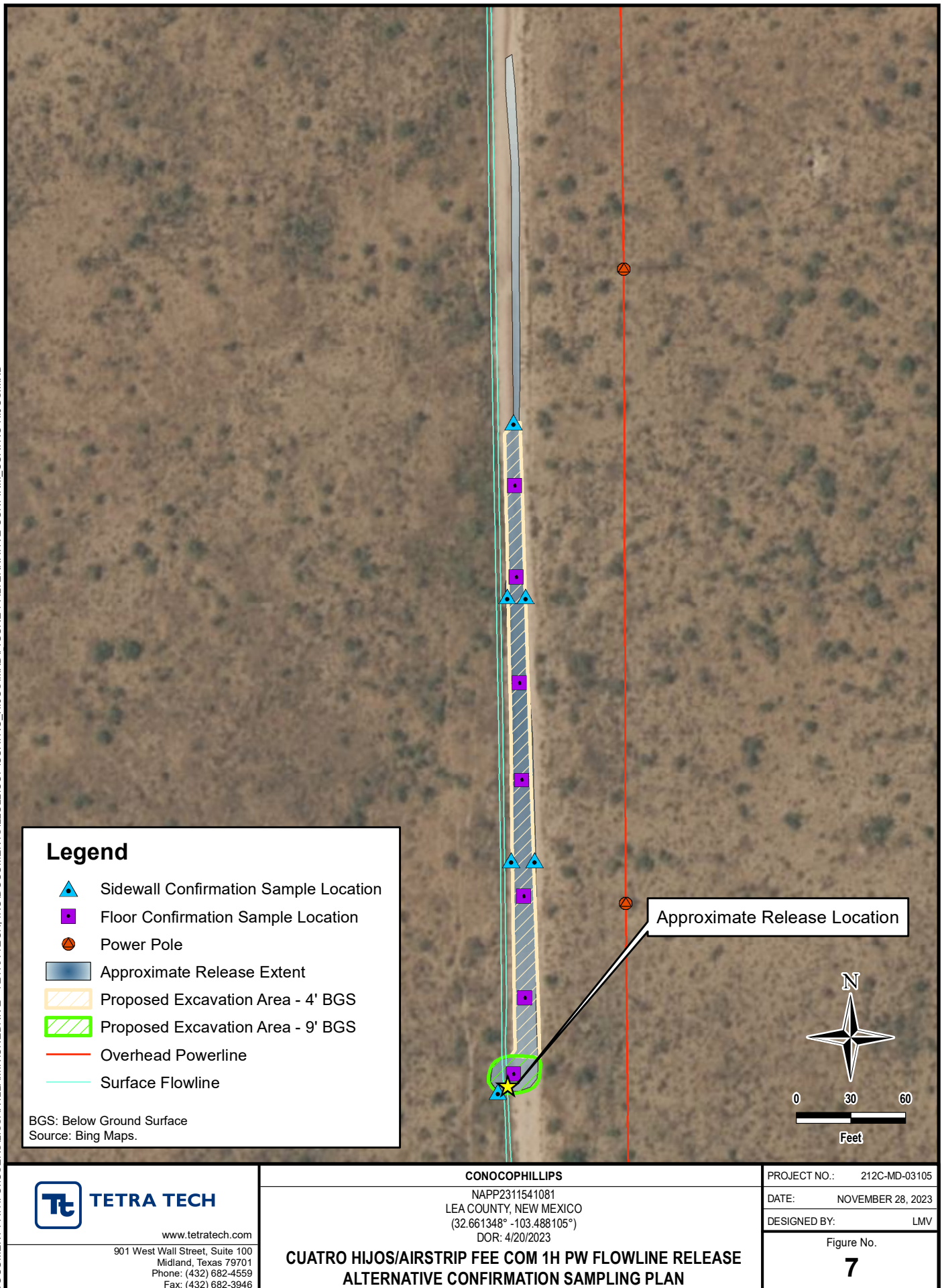
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Figure No.

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TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
SOIL ASSESSMENT- NAPP2311541081
CONOCOPHILLIPS
CUATRO HIJOS-AIRSTRIP FEE COM 1H FLOWLINE RELEASE
LEA COUNTY, NM

Sample ID	Sample Date	Sample Depth	Field Screening Results		Chloride ¹		BTEX ²										TPH ³							
			Chloride	PID			Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH (GRO+DRO+EXT DRO)	
		ft. bgs			ppm	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg		Q
AH-1/BH-1	5/11/2023	3-4	>99,999	-	28,000		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		8-9	62,000	-	24,000		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		10-11	48,000	-	4,480		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		12-13	42,000	-	2,280		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
	6/5/2023	14-15	247	-	144		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		19-20	368	-	176		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		24-25	219		192		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-2	5/11/2023	0-1	170	-	96		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		2-3	220	-	208		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		3-4	207	-	224		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
BH-2	6/5/2023	3-4	216	-	192		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		4-5	-	-	160		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		6-7	-	-	176		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		8-9	-	-	160		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		9-10	185	-	128		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-3/BH-3	5/11/2023	0-1	17,000	-	2,280		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		2-3	16,000	-	1,120		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
	6/5/2023	3-4	-	-	192		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		4-5	-	-	208		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		6-7	-	-	256		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		7-8	254	-	224		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-4/BH-4	5/11/2023	0-1	10,500	-	528		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		2-3	615	-	752		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
	6/5/2023	3-4	-	-	896		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		4-5	-	-	416		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		6-7	-	-	64		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		7-8	241	-	240		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
BH-5	6/5/2023	4-5	371	-	288		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-5	5/11/2023	0-1	400	-	176		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
		2-3	610	-	480		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-6	5/11/2023	0-1	150	-	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-7	5/11/2023	0-1	76	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-8	5/11/2023	0-1	135	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-9	5/11/2023	0-1	70	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-10	5/11/2023	0-1	81	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
AH-11	5/11/2023	0-1	135	-	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	

NOTES:

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

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

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

APPENDIX A C-141 Forms

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

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

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

Unit Letter	Section	Township	Range	County

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input 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

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

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input 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 _____	Title: _____
Signature: <u></u>	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u>	
Received by: <u>Jocelyn Harimon</u>	Date: <u>04/25/2023</u>

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input 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 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 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 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 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input 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	
District RP	
Facility ID	
Application ID	

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

Printed Name: _____ Title: _____

Signature: Jacob Laird Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Shelly Wells Date: 7/17/2023

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: _____ Title: _____

Signature: Jacob Laird Date: _____

email: _____ Telephone: _____

OCD OnlyReceived by: Shelly Wells Date: 7/17/2023☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: Nelson Velez Date: 10/06/2023

Incident ID	NAPP2311541081
District RP	
Facility ID	fAPP2203451633
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)

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Printed Name: Ike Tavarez Title: Program Manager
Signature: *Ike Tavarez* Date: 11.29.2023
email: Ike.Tavarez@ConocoPhillips.com Telephone: 432-685-2573

OCD Only

Received by: Shelly Wells Date: 11/29/2023

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

Signature: _____ Date: _____

APPENDIX B

Site Characterization Data

OCD - Mineral and Surface Ownership



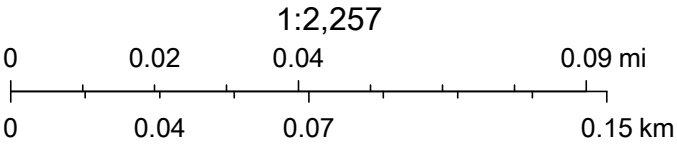
5/8/2023, 3:52:30 PM

Mineral Ownership

N-No minerals are owned by the U.S.

Land Ownership

P








U.S. BLM, Maxar, Microsoft, Esri, HERE, Garmin, iPC

Cuatro Hijos-Airstrip

KARST POTENTIAL MAP

Legend

-  Cuatro Hijos-Airstrip
-  High
-  Low
-  Medium

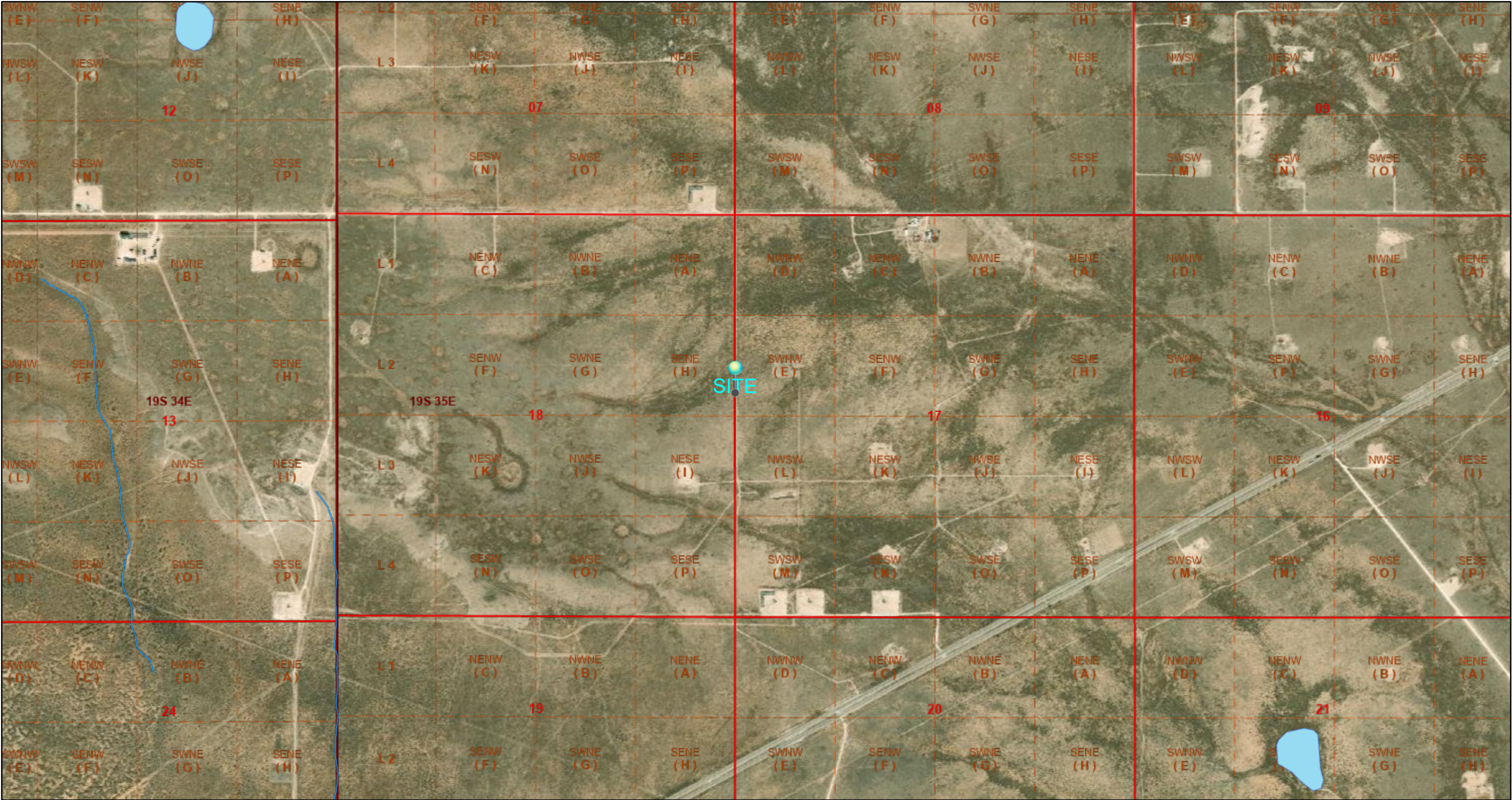
 32.661348° -103.488105

Hobbs Hwy




3000 ft


OCD Water Bodies map




5/22/2023, 2:04:09 PM




Site




OSE Streams




PLSS First Division



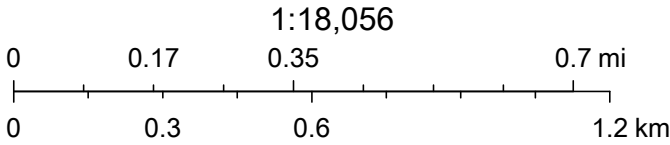
OSW Water Bodies



PLSS Second Division



PLSS Townships



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



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
L 14208 POD1	L	LE		2	2	2	18	19S	35E	641685	3615464	649	78		
L 08234 S2	L	LE				3	17	19S	35E	642192	3614259*	697	126	80	46
L 08234	L	LE		2	2	3	17	19S	35E	642487	3614566*	752	120	90	30

Average Depth to Water: **85 feet**

Minimum Depth: **80 feet**

Maximum Depth: **90 feet**

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 641778.97

Northing (Y): 3614821.49

Radius: 800

*UTM location was derived from PLSS - see Help

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.

6/12/23 12:12 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

WGS84 $\pm 15\text{ft}$ 32.65698, -103.48863 \wedge ft $\pm 12\text{ft}$ 3894 \triangle °, T ± 12 NE71



GPS coordinates 50
Remove or modify

25Oct23 12:51 Ad-hoc
Hobbs NM 88240, United States © 25-Oct-23 12:51:55

APPENDIX C

Boring Logs

212C-MD-03105		TETRA TECH		LOG OF BORING BH-1						Page 1 of 1																																					
Project Name: Cuatro Hijos - Airstrip Flowline Release																																															
Borehole LocationGPS Coordinates: 32.661371°, -103.488093°							Surface Elevation: 3874 ft																																								
Borehole Number: BH-1					Borehole Diameter (in.): 8		Date Started: 6/5/2023		Date Finished: 6/5/2023																																						
<div><div><div>DEPTH (ft)</div><div>OPERATION TYPE</div><div>SAMPLE</div><div>CHLORIDE FIELD SCREENING (ppm)</div><div>VOC FIELD SCREENING (ppm)</div><div>SAMPLE RECOVERY (%)</div><div>MOISTURE CONTENT (%)</div><div>DRY DENSITY (pcf)</div><div>LIQUID LIMIT</div><div>PLASTICITY INDEX</div><div>MINUS NO. 200 (%)</div><div>GRAPHIC LOG</div></div><div><div>WATER LEVEL OBSERVATIONS</div><div>While Drilling ∇ <u>DRY</u> ft Upon Completion of Drilling ∇ <u>DRY</u> ft</div><div>Remarks:</div><div><div>MATERIAL DESCRIPTION</div><div>DEPTH (ft)</div><div>REMARKS</div></div></div></div> <tr><td colspan="12"><div><div><div>5</div><div>10</div><div>15</div><div>20</div><div>25</div></div><div><div>-SC-</div><div>CLAYEY SAND: Brown, dry, fine-grained</div><div>1</div></div><div><div>-SM-</div><div>SAND: Light brown, dry, fine-grained, weakly cemented</div><div>4</div></div><div><div>-SM-</div><div>SAND: Pale brown, dry, fine- to medium-grained, moderately to strongly cemented, with Caliche fragments</div><div>7</div></div><div><div>-SM-</div><div>SAND: Light brown, dry, fine-grained, weakly cemented, trace caliche nodules</div><div>14</div></div><div><div>-SM-</div><div>SAND: Light tan, dry, very fine-grained</div><div>25</div></div></div><div>Bottom of borehole at 25.0 feet.</div></td></tr> <tr><td colspan="12"><div><div><div><div>Sampler Types:</div><div><div><div></div><div>Split Spoon</div></div><div><div></div><div>Shelby</div></div><div><div></div><div>Bulk Sample</div></div><div><div></div><div>Grab Sample</div></div><div><div></div><div>Acetate Liner</div></div><div><div></div><div>Vane Shear</div></div><div><div></div><div>Discrete Sample</div></div><div><div></div><div>Test Pit</div></div></div><div><div><div>Operation Types:</div><div><div></div><div>Mud Rotary</div></div><div><div></div><div>Continuous Flight Auger</div></div><div><div></div><div>Wash Rotary</div></div><div><div></div><div>Hand Auger</div></div><div><div></div><div>Air Rotary</div></div><div><div></div><div>Direct Push</div></div><div><div></div><div>Core Barrel</div></div></div></div><div><div>Notes: Surface elevation is an approximate value obtained from Google Earth data.</div></div></div></div></div></td></tr> <tr><td colspan="4">Logger: Colton Bickerstaff</td><td colspan="4">Drilling Equipment: Air Rotary</td><td colspan="4">Driller: Scarborough Drilling</td></tr>												<div><div><div>5</div><div>10</div><div>15</div><div>20</div><div>25</div></div><div><div>-SC-</div><div>CLAYEY SAND: Brown, dry, fine-grained</div><div>1</div></div><div><div>-SM-</div><div>SAND: Light brown, dry, fine-grained, weakly cemented</div><div>4</div></div><div><div>-SM-</div><div>SAND: Pale brown, dry, fine- to medium-grained, moderately to strongly cemented, with Caliche fragments</div><div>7</div></div><div><div>-SM-</div><div>SAND: Light brown, dry, fine-grained, weakly cemented, trace caliche nodules</div><div>14</div></div><div><div>-SM-</div><div>SAND: Light tan, dry, very fine-grained</div><div>25</div></div></div> <div>Bottom of borehole at 25.0 feet.</div>												<div><div><div><div>Sampler Types:</div><div><div><div></div><div>Split Spoon</div></div><div><div></div><div>Shelby</div></div><div><div></div><div>Bulk Sample</div></div><div><div></div><div>Grab Sample</div></div><div><div></div><div>Acetate Liner</div></div><div><div></div><div>Vane Shear</div></div><div><div></div><div>Discrete Sample</div></div><div><div></div><div>Test Pit</div></div></div><div><div><div>Operation Types:</div><div><div></div><div>Mud Rotary</div></div><div><div></div><div>Continuous Flight Auger</div></div><div><div></div><div>Wash Rotary</div></div><div><div></div><div>Hand Auger</div></div><div><div></div><div>Air Rotary</div></div><div><div></div><div>Direct Push</div></div><div><div></div><div>Core Barrel</div></div></div></div><div><div>Notes: Surface elevation is an approximate value obtained from Google Earth data.</div></div></div></div></div>												Logger: Colton Bickerstaff				Drilling Equipment: Air Rotary				Driller: Scarborough Drilling			
<div><div><div>5</div><div>10</div><div>15</div><div>20</div><div>25</div></div><div><div>-SC-</div><div>CLAYEY SAND: Brown, dry, fine-grained</div><div>1</div></div><div><div>-SM-</div><div>SAND: Light brown, dry, fine-grained, weakly cemented</div><div>4</div></div><div><div>-SM-</div><div>SAND: Pale brown, dry, fine- to medium-grained, moderately to strongly cemented, with Caliche fragments</div><div>7</div></div><div><div>-SM-</div><div>SAND: Light brown, dry, fine-grained, weakly cemented, trace caliche nodules</div><div>14</div></div><div><div>-SM-</div><div>SAND: Light tan, dry, very fine-grained</div><div>25</div></div></div> <div>Bottom of borehole at 25.0 feet.</div>																																															
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Logger: Colton Bickerstaff				Drilling Equipment: Air Rotary				Driller: Scarborough Drilling																																							

[illegible]


212C-MD-03105		TETRA TECH		LOG OF BORING BH-3				Page 1 of 1						
Project Name: Cuatro Hijos - Airstrip Flowline Release														
Borehole Location GPS Coordinates: 32.661951°, -103.488094°						Surface Elevation: 3870 ft								
Borehole Number: BH-3					Borehole Diameter (in.): 8		Date Started: 6/5/2023		Date Finished: 6/5/2023					
DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS While Drilling <u>▽</u> DRY ft Upon Completion of Drilling <u>▽</u> DRY ft Remarks:		
												MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
5												-SC- CLAYEY SAND: Brown, dry, fine-grained	1	
												-SM- SAND: Light brown, dry, fine-grained, weakly cemented	3	
												-SM- SAND: Pale brown, dry, fine- to medium-grained, moderately to strongly cemented, with Caliche fragments	7	
												-SM- SAND: Light brown, dry, fine-grained, weakly cemented, trace caliche nodules	8	
Bottom of borehole at 8.0 feet.														
Sampler Types: Split Spoon Shelby Bulk Sample Grab Sample Acetate Liner Vane Shear Discrete Sample Test Pit		Operation Types: Mud Rotary Continuous Flight Auger Wash Rotary Hand Auger Air Rotary Direct Push Core Barrel		Notes: Surface elevation is an approximate value obtained from Google Earth data.										
Logger: Colton Bickerstaff		Drilling Equipment: Air Rotary		Driller: Scarborough Drilling										

212C-MD-03105	TETRA TECH	LOG OF BORING BH-4	Page 1 of 1
Project Name: Cuatro Hijos - Airstrip Flowline Release			
Borehole Location GPS Coordinates: 32.662315°, -103.488100°		Surface Elevation: 3868 ft	
Borehole Number: BH-4		Borehole Diameter (in.): 8	Date Started: 6/5/2023 Date Finished: 6/5/2023

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS		REMARKS	
												While Drilling	Upon Completion of Drilling		
													DRY ft DRY ft Remarks:		
			ExStik	PID				LL	PI				MATERIAL DESCRIPTION	DEPTH (ft)	
													-SC- CLAYEY SAND: Brown, dry, fine-grained	1	
													-SM- SAND: Light brown, dry, fine-grained, weakly cemented	3	
													-SM- SAND: Pale brown, dry, fine- to medium-grained, moderately to strongly cemented, with Caliche fragments	6	
													-SM- SAND: Light brown, dry, fine-grained, weakly cemented, trace caliche nodules	8	
Bottom of borehole at 8.0 feet.															

Sampler Types: Split Spoon Shelby Bulk Sample Grab Sample Acetate Liner Vane Shear Discrete Sample Test Pit	Operation Types: Mud Rotary Continuous Flight Auger Wash Rotary Hand Auger Air Rotary Direct Push Core Barrel	Notes: Surface elevation is an approximate value obtained from Google Earth data.
--	---	---

Logger: Colton Bickerstaff	Drilling Equipment: Air Rotary	Driller: Scarborough Drilling
----------------------------	--------------------------------	-------------------------------

212C-MD-03105	 TETRA TECH	LOG OF BORING BH-5	Page 1 of 1
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Project Name: Cuatro Hijos - Airstrip Flowline Release

Borehole Location GPS Coordinates: 32.661400°, -103.488093°

Surface Elevation: 3874 ft

Borehole Number: BH-5
















Borehole
Diameter (in.): 8

Date Started: 6/5/2023

Date Finished: 6/5/2023

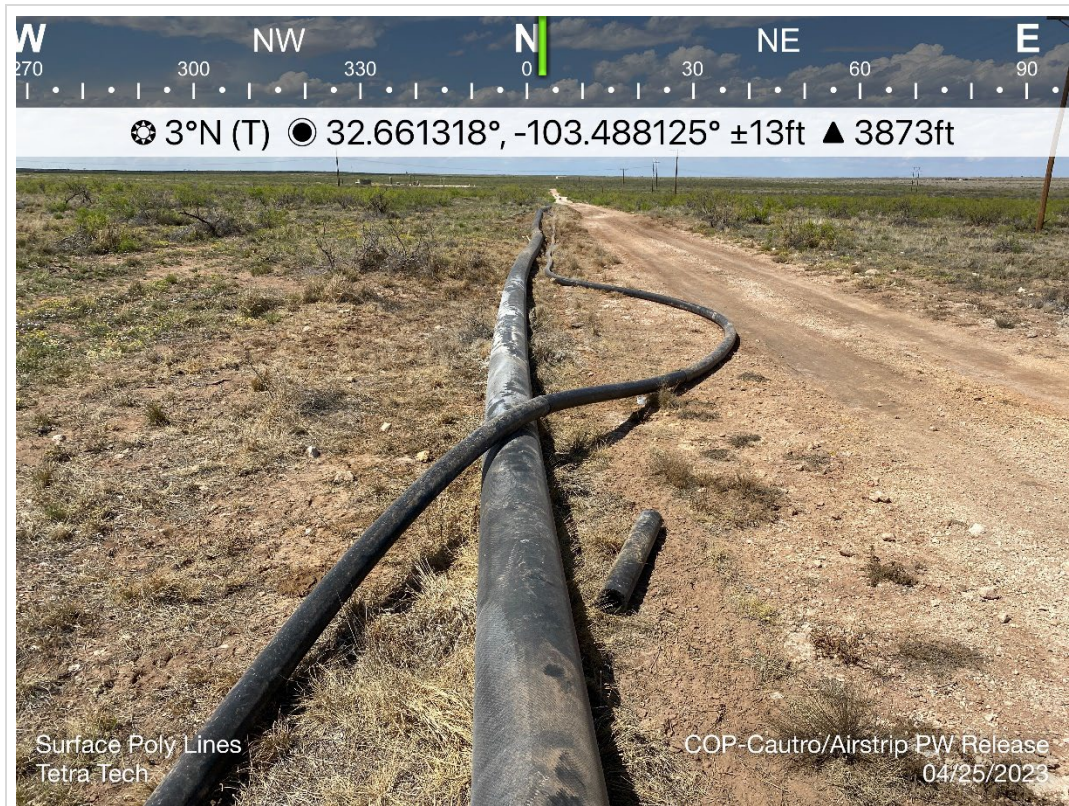
DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS		DEPTH (ft)	REMARKS
												While Drilling	Upon Completion of Drilling		
			ExStik	PID				LL	PI			REMARKS: While Drilling <u>▽</u> DRY ft Upon Completion of Drilling <u>▽</u> DRY ft			
												MATERIAL DESCRIPTION			
												-SC- CLAYEY SAND: Brown, dry, fine-grained		1	
												-SM- SAND: Light brown, dry, fine-grained, weakly cemented		4	
5												-SM- SAND: Pale brown, dry, fine- to medium-grained, moderately to strongly cemented, with Caliche fragments		5	

Bottom of borehole at 5.0 feet.

Sampler Types:  Split Spoon  Shelby  Bulk Sample  Grab Sample  Acetate Liner  Vane Shear  Discrete Sample  Test Pit	Operation Types:  Hand Auger  Mud Rotary  Continuous Flight Auger  Wash Rotary  Air Rotary  Direct Push  Core Barrel	Notes: Surface elevation is an approximate value obtained from Google Earth data.
Logger: Colton Bickerstaff	Drilling Equipment: Air Rotary	Driller: Scarborough Drilling

APPENDIX D

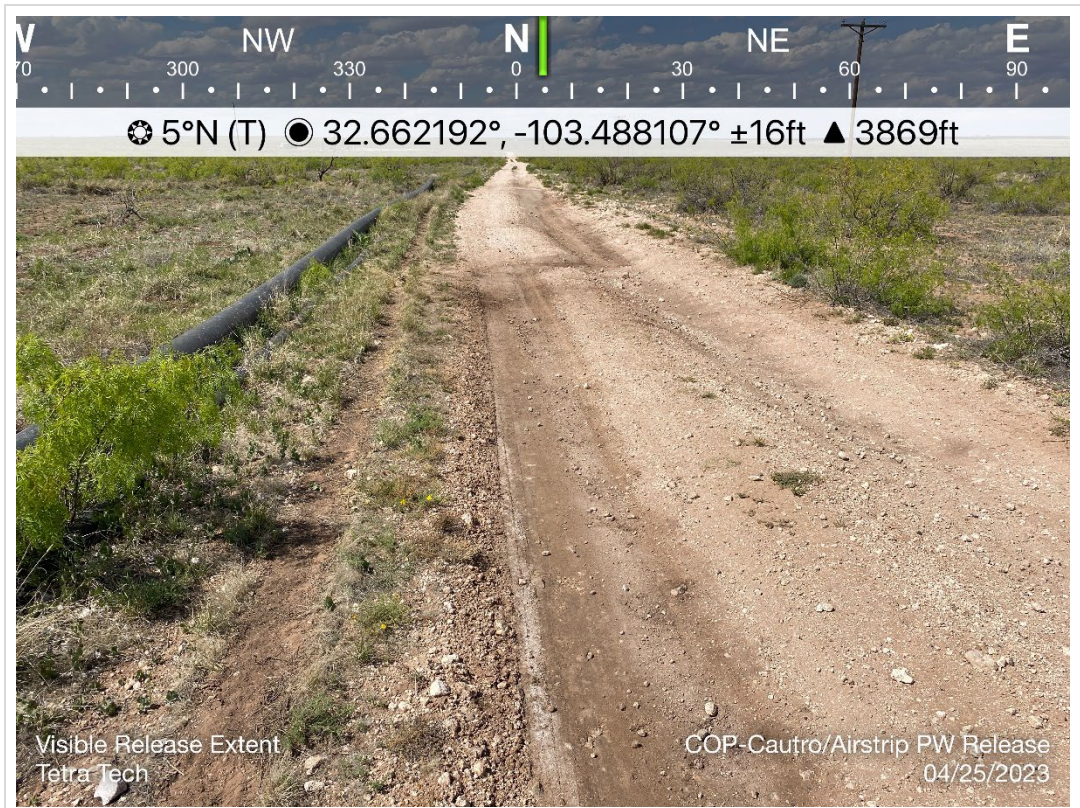
Photographic Documentation



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View north. Release point with flowline repair.	1
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	4/25/23



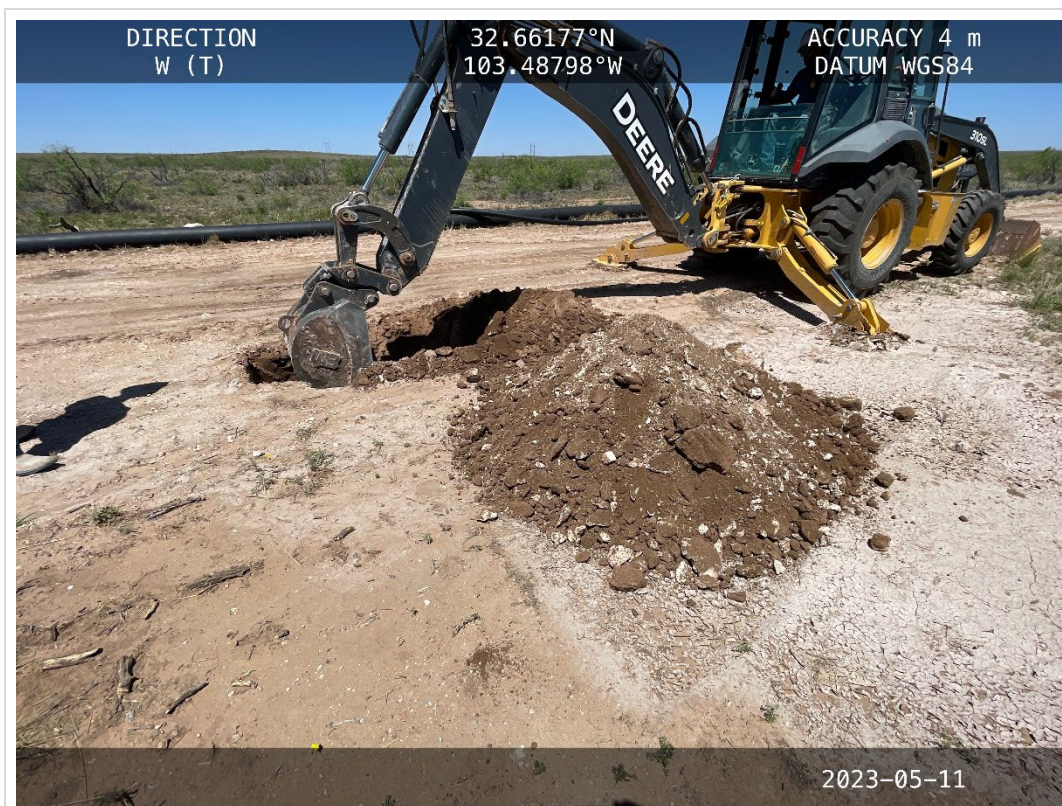
TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View north. Release extent flow path along caliche road.	2
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	4/25/23



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View north. Release extent flow path switching along east side of caliche road.	3
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	4/25/23



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View south. Vertical trench sampling location AH-1.	4
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	4/25/23



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View west. Vertical trench sampling location AH-2.	5
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	5/11/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View west. Vertical trench sampling location AH-4. Dense subsurface lithology visible.	6
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	5/11/2023



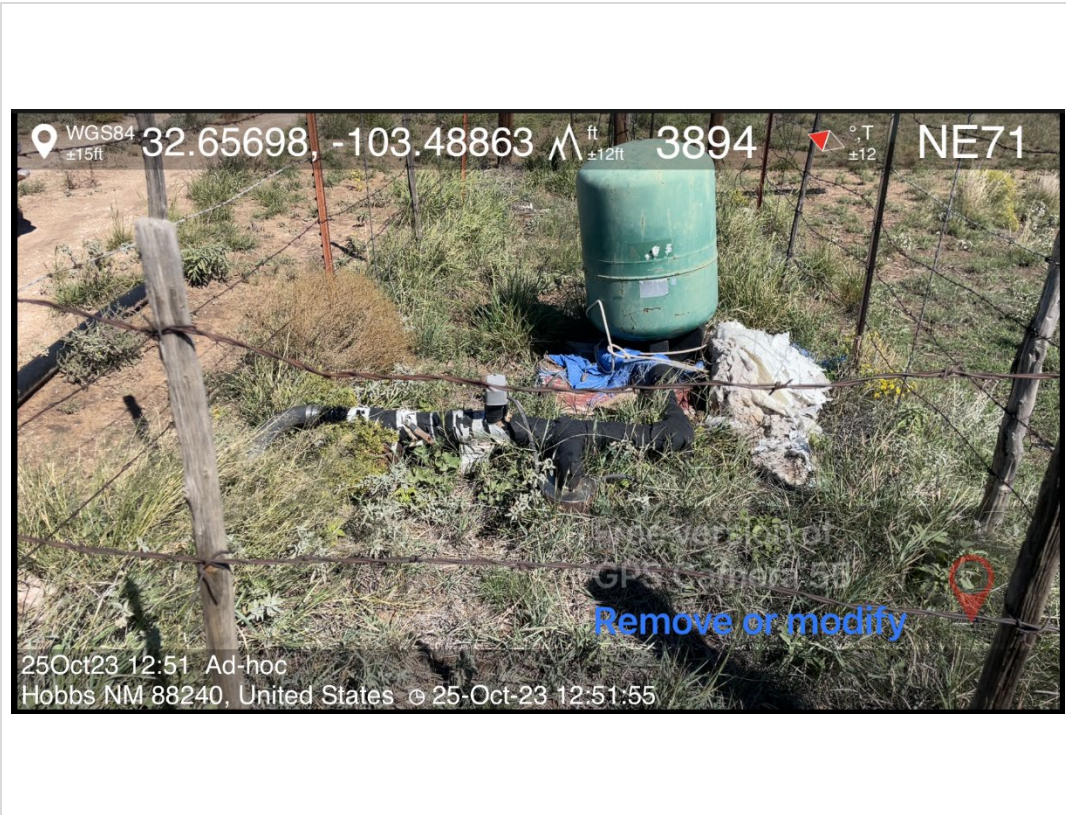
TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View North. Horizontal soil sampling location AH-6.	7
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	5/11/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View north. Air rotary boring assessment location BH-1.	8
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	6/5/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	View north. Air rotary boring assessment location BH-3.	9
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	6/5/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-03105A	DESCRIPTION	Livestock Water Well (32.65698, -103.48863)	10
	SITE NAME	Cuatro Hijos-Airstrip Flowline Release	10/25/2023

APPENDIX E

Analytical Data



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

May 17, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CUATRO HIJOS

Enclosed are the results of analyses for samples received by the laboratory on 05/11/23 16:35.

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". The signature is written in a cursive, flowing style.

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: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 2 (0-1') (H232380-01)

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	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEX	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/15/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 2 (2'-3') (H232380-02)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEx	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 95.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 2 (3'-4') (H232380-03)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEX	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 83.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.6 % 49.1-148

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 3 (0-1') (H232380-04)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEx	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2280	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 82.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.2 % 49.1-148

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*=Accredited Analyte

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 3 (2'-3') (H232380-05)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEx	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 92.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.3 % 49.1-148

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*=Accredited Analyte

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 4 (0-1') (H232380-06)

BTX 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	05/14/2023	ND	2.02	101	2.00	13.4		
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0		
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5		
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6		
Total BTX	<0.300	0.300	05/14/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 96.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 4 (2'-3') (H232380-07)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEx	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	200	100	200	5.17	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	195	97.7	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 74.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.7 % 49.1-148

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 5 (0-1') (H232380-08)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4		
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0		
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5		
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6		
Total BTEx	<0.300	0.300	05/14/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 94.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 5 (2'-3') (H232380-09)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEx	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 97.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 6 (0-1') (H232380-10)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4		
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0		
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5		
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6		
Total BTEx	<0.300	0.300	05/14/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 7 (0-1') (H232380-11)

BTX 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	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTX	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 8 (0-1') (H232380-12)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/14/2023	ND	2.02	101	2.00	13.4		
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0		
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5		
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6		
Total BTEx	<0.300	0.300	05/14/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 9 (0-1') (H232380-13)

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	05/14/2023	ND	2.02	101	2.00	13.4		
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0		
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5		
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6		
Total BTEx	<0.300	0.300	05/14/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 10 (0-1') (H232380-14)

BTX 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	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTX	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 93.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.7 % 49.1-148

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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/17/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 11 (0-1') (H232380-15)

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	05/14/2023	ND	2.02	101	2.00	13.4	
Toluene*	<0.050	0.050	05/14/2023	ND	2.07	103	2.00	13.0	
Ethylbenzene*	<0.050	0.050	05/14/2023	ND	2.00	100	2.00	12.5	
Total Xylenes*	<0.150	0.150	05/14/2023	ND	6.21	104	6.00	11.6	
Total BTEX	<0.300	0.300	05/14/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	05/15/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/13/2023	ND	211	105	200	2.48	
DRO >C10-C28*	<10.0	10.0	05/13/2023	ND	212	106	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	05/13/2023	ND					

Surrogate: 1-Chlorooctane 83.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene", written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Tetra Tech Project Manager: Christian Lull Address: 8911 N Capital Tr Hwy, Ste 2310 City: Austin State: TX Zip: Phone #: (512) 565-0190 Fax #: Project #: 212C-MB-03/05 Project Owner: Conaco Properties Project Name: Cuatro Hijos Project Location: Brea County Sampler Name: Chris Trellis		P.O. #: Company: Tetra Tech Attn: Christian Lull Address: emai:1 City: State: Zip: Phone #: Fax #:	
FOR LAB USE ONLY		BILL TO	
Lab I.D. H23238	Sample I.D. AH-2 (0-1) AH-2 (2-3) AH-2 (3-4) AH-3 (0-1) AH-3 (2-3) AH-4 (0-1) AH-4 (2-3) AH-5 (0-1) AH-5 (2-3)	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	DATE 5-11-23 5-11-23 5-11-23 5-11-23 5-11-23 5-11-23 5-11-23 5-11-23 5-11-23
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising from negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analyses. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.		ANALYSIS REQUEST	
Relinquished By: [Signature] Date: 5-11-23 Time: 1800		Received By: [Signature] Date: 5-11-23 Time: 1835	
Relinquished By: [Signature] Date: 5-11-23 Time: 1800		Received By: [Signature] Date: 5-11-23 Time: 1835	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C -1.1 Corrected Temp. °C -1.7	
Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>		Thermometer ID #113 Correction Factor -0.6°C	
Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>		Bacteria (only) Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Observed Temp. °C Corrected Temp. °C	
Remarks:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:	
Remarks:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:	

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Tetra Tech		P.O. #:		BILL TO		ANALYSIS REQUEST																															
Project Manager: Christina Lull																																					
Address: 8911 N. Capital TX Hwy, Ste 2310		Company: Tetra Tech																																			
City: Abilene		Attn: Christina Lull																																			
State: TX		Address: Emmi																																			
Phone #: (512) 565-0190		City:																																			
Fax #:		State:																																			
Project #: 212C-MD-03105		Project Owner: Conoco Phillips																																			
Project Name: Control Hijos		City:																																			
Project Location: Lea County		State:																																			
Sampler Name: Carla Taylor		Phone #:																																			
FOR LAB USE ONLY		Fax #:																																			
Lab I.D.		Sample I.D.																																			
H232380																																					
10		AH-6 (0-1')		6		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME		TPH 8015M		BTEX 0021B		Chloride 5M4500KLB	
11		AH-7 (0-1')		6																																	
12		AH-8 (0-1')		6																																	
13		AH-9 (0-1')		6																																	
14		AH-10 (0-1')		6																																	
15		AH-11 (0-1')		6																																	

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: CEL	Date: 5-11-23	Received By: Christina Lull	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:
Relinquished By:	Date:	Received By:	All Results are emailed. Please provide Email address:
Time: 1600	Time: 1635	Time: 1635	
Delivered By: (Circle One)	Observed Temp. °C: -1.1	Sample Condition: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Leaky	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush
Sampler - UPS - Bus - Other:	Corrected Temp. °C: -1.7	Cool <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	Bacteria (only) Sample Condition: <input type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Observed Temp. °C: 9.0
FORM 006 R 3.3 07/16/22			Thermometer ID #113 <input type="checkbox"/> Correction Factor -0.6°C <input type="checkbox"/> No <input type="checkbox"/> Yes

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



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

May 18, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CUATRO HIJOS

Enclosed are the results of analyses for samples received by the laboratory on 05/11/23 16:35.

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". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

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: 05/11/2023
 Reported: 05/18/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 1 (3'-4') (H232381-03)

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/17/2023	ND	2.21	111	2.00	16.2	
Toluene*	<0.050	0.050	05/17/2023	ND	2.24	112	2.00	14.6	
Ethylbenzene*	<0.050	0.050	05/17/2023	ND	2.15	108	2.00	13.7	
Total Xylenes*	<0.150	0.150	05/17/2023	ND	6.71	112	6.00	13.7	
Total BTEX	<0.300	0.300	05/17/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	28000	16.0	05/18/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/17/2023	ND	189	94.4	200	2.54	
DRO >C10-C28*	<10.0	10.0	05/17/2023	ND	165	82.5	200	8.69	
EXT DRO >C28-C36	<10.0	10.0	05/17/2023	ND					

Surrogate: 1-Chlorooctane 96.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.6 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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

Received: 05/11/2023
 Reported: 05/18/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 1 (8'-9') (H232381-06)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/17/2023	ND	2.21	111	2.00	16.2		
Toluene*	<0.050	0.050	05/17/2023	ND	2.24	112	2.00	14.6		
Ethylbenzene*	<0.050	0.050	05/17/2023	ND	2.15	108	2.00	13.7		
Total Xylenes*	<0.150	0.150	05/17/2023	ND	6.71	112	6.00	13.7		
Total BTEX	<0.300	0.300	05/17/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	24000	16.0	05/18/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/17/2023	ND	189	94.4	200	2.54	
DRO >C10-C28*	<10.0	10.0	05/17/2023	ND	165	82.5	200	8.69	
EXT DRO >C28-C36	<10.0	10.0	05/17/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 05/11/2023
 Reported: 05/18/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 1 (10'-11') (H232381-07)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/17/2023	ND	2.21	111	2.00	16.2		
Toluene*	<0.050	0.050	05/17/2023	ND	2.24	112	2.00	14.6		
Ethylbenzene*	<0.050	0.050	05/17/2023	ND	2.15	108	2.00	13.7		
Total Xylenes*	<0.150	0.150	05/17/2023	ND	6.71	112	6.00	13.7		
Total BTEx	<0.300	0.300	05/17/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4480	16.0	05/18/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/17/2023	ND	189	94.4	200	2.54	
DRO >C10-C28*	<10.0	10.0	05/17/2023	ND	165	82.5	200	8.69	
EXT DRO >C28-C36	<10.0	10.0	05/17/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

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*=Accredited Analyte

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

Received: 05/11/2023
 Reported: 05/18/2023
 Project Name: CUATRO HIJOS
 Project Number: 212C-MD-03105
 Project Location: CP - LEA COUNTY

Sampling Date: 05/11/2023
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: AH - 1 (12'-13') (H232381-08)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/17/2023	ND	2.21	111	2.00	16.2		
Toluene*	<0.050	0.050	05/17/2023	ND	2.24	112	2.00	14.6		
Ethylbenzene*	<0.050	0.050	05/17/2023	ND	2.15	108	2.00	13.7		
Total Xylenes*	<0.150	0.150	05/17/2023	ND	6.71	112	6.00	13.7		
Total BTEX	<0.300	0.300	05/17/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	2280	16.0	05/18/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/17/2023	ND	189	94.4	200	2.54	
DRO >C10-C28*	<10.0	10.0	05/17/2023	ND	165	82.5	200	8.69	
EXT DRO >C28-C36	<10.0	10.0	05/17/2023	ND					

Surrogate: 1-Chlorooctane 98.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.3 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
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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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



BILL TO

ANALYSIS REQUEST

Lab I.D. _____ Sample I.D. _____

PLEASE NOTE: Liability and Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Received By:

Received By:

Date:

Received By:

Observed Temp. °C
-11.1

Sample Condition

CHECKED BY:

Turnaround Time:

Standard

☒

Bacteria (only

Sample Condition

Corrected Temp. °C 1.7

☒ Yes ☒ Yes

l

Thermometer ID #113

☐ Yes ☐ Yes

3

FOIA=000 K.S. 07710122

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



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

June 08, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CUATRO HIJOS

Enclosed are the results of analyses for samples received by the laboratory on 06/05/23 12:32.

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". The signature is written in a cursive, flowing style.

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:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 1 (14'-15') (H232829-01)

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	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	144	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 88.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 1 (19'-20') (H232829-02)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	176	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 85.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.3 % 49.1-148

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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 1 (24'-25') (H232829-03)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	192	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 84.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 2 (3'-4') (H232829-04)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	192	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	213	106	200	27.1	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	204	102	200	17.6	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 83.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 2 (4'-5') (H232829-05)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	160	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/05/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/05/2023	ND					

Surrogate: 1-Chlorooctane 92.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.3 % 49.1-148

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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 2 (6'-7') (H232829-06)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	176	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 2 (8'-9') (H232829-07)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	160	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 99.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 2 (9'-10') (H232829-08)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	128	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 93.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 3 (3'-4') (H232829-09)

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 96.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 3 (4'-5') (H232829-10)

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 3 (6'-7') (H232829-11)

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19	
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75	
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55	
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30	
Total BTEX	<0.300	0.300	06/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	06/06/2023	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.7 % 49.1-148

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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 3 (7'-8') (H232829-12)

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	224	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 90.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 4 (3'-4') (H232829-13)

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	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	896	16.0	06/06/2023	ND	448	112	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 92.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 4 (4'-5') (H232829-14)

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	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	416	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 93.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 4 (6'-7') (H232829-15)

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	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	64.0	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 90.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 4 (7'-8') (H232829-16)

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	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	240	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 95.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Analytical Results For:

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

Received:	06/05/2023	Sampling Date:	06/05/2023
Reported:	06/08/2023	Sampling Type:	Soil
Project Name:	CUATRO HIJOS	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-03105 AIRSTRIP FL RELEASE	Sample Received By:	Tamara Oldaker
Project Location:	CP - LEA COUNTY		

Sample ID: BH - 5 (4'-5') (H232829-17)

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	06/06/2023	ND	1.79	89.6	2.00	7.19		
Toluene*	<0.050	0.050	06/06/2023	ND	1.84	91.9	2.00	2.75		
Ethylbenzene*	<0.050	0.050	06/06/2023	ND	1.90	94.9	2.00	3.55		
Total Xylenes*	<0.150	0.150	06/06/2023	ND	5.63	93.9	6.00	3.30		
Total BTEX	<0.300	0.300	06/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	288	16.0	06/06/2023	ND	448	112	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/06/2023	ND	227	113	200	20.0	
DRO >C10-C28*	<10.0	10.0	06/06/2023	ND	191	95.3	200	9.16	
EXT DRO >C28-C36	<10.0	10.0	06/06/2023	ND					

Surrogate: 1-Chlorooctane 92.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.6 % 49.1-148

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Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Tetra Tech

Project Manager: Christian Lull

Address: 8911 Capital o Texas Hwy, Suite 2310

City: Austin

Phone #: (512)565-0190

Project #: 212C-MD-03105

Project Name: Cuatro Hijos Airstrip Flowline Release

Project Location: Lea County, New Mexico

Sampler Name: Colton Bickerstaff

Lab I.D.

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

State: TX

City: Austin

Zip:

Company: Tetra Tech

Attn: Christian Lull

Address: EMAIL

State:

City:

Zip:

Phone #:

Fax #:

BILL TO

P.O. #:

Company: Tetra Tech

Attn: Christian Lull

Address: EMAIL

State:

City:

Zip:

ANALYSIS REQUEST

TPH 8015M

BTEX 8021B

Chloride SM4500CI-B

Sample I.D.

11 BH-3 (6-7)

12 BH-3 (7-8)

13 BH-4 (3-4)

14 BH-4 (4-5)

15 BH-4 (6-7)

16 BH-4 (7-8)

17 BH-5 (4-5)

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

MATRIX

PRESERV.

SAMPLING

Verbal Result: ☐ Yes ☐ No

Add'l Phone #:

REMARKS:

Relinquished By: Colton Bickerstaff

Time: 12:33

Date: 6/5/23

Observed Temp.: 26

Corrected Temp.: 26

3-ample Condition

Checked By: (Initials)

Thermometer ID #113

Correction Factor -0.5°C

Relinquished By:

Time:

Date:

Observed Temp.: 26

Corrected Temp.: 26

3-ample Condition

Checked By: (Initials)

Thermometer ID #113

Correction Factor -0.5°C

Verbal Result: ☐ Yes ☐ No

Add'l Phone #:

REMARKS:

Verbal Result: ☐ Yes ☐ No

Add'l Phone #:

REMARKS:

Verbal Result: ☐ Yes ☐ No

Add'l Phone #:

REMARKS:

Verbal Result: ☐ Yes ☐ No

Add'l Phone #:

REMARKS:

APPENDIX F

Seed Mixture Details


Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 20, Sep 6, 2023

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

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

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

Custom Soil Resource Report

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KO	Kimbrough gravelly loam, dry, 0 to 3 percent slopes	0.6	100.0%
Totals for Area of Interest		0.6	100.0%

Map Unit Descriptions

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

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

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

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

Custom Soil Resource Report

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

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

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

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

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

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

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

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

Custom Soil Resource Report

Lea County, New Mexico

KO—Kimbrough gravelly loam, dry, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tw43*Elevation:* 2,500 to 4,800 feet*Mean annual precipitation:* 14 to 16 inches*Mean annual air temperature:* 57 to 63 degrees F*Frost-free period:* 180 to 220 days*Farmland classification:* Not prime farmland

Map Unit Composition

Kimbrough, dry, and similar soils: 80 percent*Minor components:* 20 percent*Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Kimbrough, Dry

Setting

Landform: Playa rims, plains*Down-slope shape:* Convex, linear*Across-slope shape:* Concave, linear*Parent material:* Loamy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 3 inches: gravelly loam*Bw - 3 to 10 inches:* loam*Bkkm1 - 10 to 16 inches:* cemented material*Bkkm2 - 16 to 80 inches:* cemented material

Properties and qualities

Slope: 0 to 3 percent*Depth to restrictive feature:* 4 to 18 inches to petrocalcic*Drainage class:* Well drained*Runoff class:* Very high*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.01 in/hr)*Depth to water table:* More than 80 inches*Frequency of flooding:* None*Frequency of ponding:* None*Calcium carbonate, maximum content:* 95 percent*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*Sodium adsorption ratio, maximum:* 1.0*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified*Land capability classification (nonirrigated):* 7s*Hydrologic Soil Group:* D*Ecological site:* R077DY049TX - Very Shallow 12-17" PZ*Hydric soil rating:* No

Custom Soil Resource Report

Minor Components

Eunice

Percent of map unit: 10 percent

Landform: Plains

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: R077DY049TX - Very Shallow 12-17" PZ

Hydric soil rating: No

Spraberry

Percent of map unit: 6 percent

Landform: Playa rims, plains

Down-slope shape: Convex, linear

Across-slope shape: Linear

Ecological site: R077DY049TX - Very Shallow 12-17" PZ

Hydric soil rating: No

Kenhill

Percent of map unit: 4 percent

Landform: Plains

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R077DY038TX - Clay Loam 12-17" PZ

Hydric soil rating: No

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Custom Soil Resource Report

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SLO Seed Mix

SM Series

1 REVEGETATION PLANS

The following Revegetation Plans were developed for revegetation of sites in southeastern New Mexico. To determine which revegetation plan is appropriate follow procedures in the section titled Determining the Revegetation Plan.

Revegetation Plans contain seed mixtures, as well as seed bed preparation and planting requirements. The detailed instructions for seedbed preparation and planting can be found in the section Revegetation Techniques.

Table 3 - Revegetation Plans, Codes, and Soil Types for Southeastern New Mexico

REVEGETATION PLANS	CODE	SOIL TEXTURES
Clay	C	Clay, Silty Clay, Stony Silty Clay, Clay Loam, Silty Clay Loam (including saline and sodic Clay soils)
Loam	L	Silty Loam, Cobbly Silt Loam, Stony Silt Loam, Silt, Loam, Sandy, Clay Loam
Sandy Loam	SL	Very Fine Sandy Loam, Fine Sandy Loam, Cobbly Fine Sandy Loam, Sandy Loam, Cobbly Sandy Loam, Gravelly Fine Sandy Loam, Very Gravelly Fine Sand Loam, Stony Fine Sandy Loam, Stony Sandy Loam
Shallow	SH	Rocky Loam, Cobbly Loam
Course	CS	Gravelly Loam, very Gravelly Loam, Gravelly Sandy Loam, Very Gravelly Sandy Loam, Stony Loam, Stony Sandy Loam
Sandy	S	Loamy Fine Sand, Loam Sand, Very Gravelly Loamy Fine Sand
Blow Sand	BS	Fine Sand, Sand, Coarse Sand
Mountain Meadow	MM	Clay, Loam
Mountain Upland	MU	Clay Loam, Loam



NMSLO Seed Mix**Loamy (L)****LOAMY (L) SITES SEED MIXTURE:**

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Black grama	VNS, Southern	1.0	D
Blue grama	Lovington	1.0	D
Sideoats grama	Vaughn, El Reno	4.0	F
Sand dropseed	VNS, Southern	2.0	S
Alkali sacaton	VNS, Southern	1.0	
Little bluestem	Cimarron, Pastura	1.5	F
Forbs:			
Firewheel (<i>Gaillardia</i>)	VNS, Southern	1.0	D
Shrubs:			
Fourwing saltbush	Marana, Santa Rita	1.0	D
Common winterfat	VNS, Southern	0.5	F
Total PLS/acre		18.0	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box

VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at <http://plants.usda.gov>.



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

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

CONDITIONS

Action 289567

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 289567
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan approved. The alternative confirmation sampling plan taking confirmation samples no more than 400 square feet is approved. Submit closure report to OCD by 6/25/2024.	2/27/2024