TETRA TECH

October 24, 2023

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

Re: Closure Report
ConocoPhillips (Heritage COG Operating, LLC)
Graham Cracker 16 State #002H Tinhorn Release
Unit Letters N and O, Section 9, Township 26 South, Range 28 East
Eddy County, New Mexico
Incident ID# nAB1806438251

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips Company (ConocoPhillips) to assess a historic release and subsequent remedial actions completed at the Graham Cracker 16 State #002H Tinhorn Release (Site), which occurred approximately 500 feet northwest of an associated well pad (Graham Cracker 16 State #003H/API No. 30-015-41533). The release footprint is located in Public Land Survey System (PLSS) Unit Letters N and O, Section 9, Township 26 South, Range 28 East, in Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.05012°, -104.09246°, as shown on Figures 1 and 2.

BACKGROUND

According to the State of New Mexico Oil Conservation Division (NMOCD) C-141 Initial Report, the release was discovered on February 24, 2018. The C-141 reports that the release was caused by a hole that formed in a check valve due to internal corrosion. Approximately 25 barrels (bbls) of produced water were reported released and approximately 23 bbls of produced water were recovered with a vacuum truck. The C-141 reports that the release was contained inside of the tinhorn surrounding the valve. The NMOCD approved the initial C-141 on March 5, 2018, and subsequently assigned the release the Incident ID nAB1806438251. The initial C-141 form is included in Appendix A.

This incident is included in an Agreed Compliance Order-Releases (ACO-R) between COG Operating LLC (COG) and the NMOCD signed on November 20 and 26, 2018, respectively.

LAND OWNERSHIP

The Site is located on land owned by the New Mexico State Land Office (NMSLO). Approval from the NMSLO is required prior to any intrusive work being completed at the Site. On behalf of ConocoPhillips, Tetra Tech contracted with SWCA Environmental Consultants (SWCA) to conduct an Archaeological Resources Management Section (ARMS) review for this inadvertent release.

A literature and file search were conducted on September 22, 2023, using the State of New Mexico's New Mexico Cultural Resources Information System online database which included a review of known historic resources, including the built environment, Laboratory of Anthropology, and State/National Register listed properties. Other sources reviewed include the Bureau of Land Management (BLM) General Land Office (GLO) Records website, http://www.glorecords.blm.gov, which include land patent and general land office survey data. As this area was not settled by Spain, land grant records were not reviewed. The review was conducted for the Area of Potential Effect (APE) and 1 kilometer (km) surrounding the APE. There are three

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(3) land patents in the area, including June 21, 1898: New Mexico Territorial Grant (30 Stat. 484) patented on February 6, 1919; June 21, 1898: New Mexico Territorial Grant (30 Stat. 484) patented on June 6, 1922; and June 20, 1910: New Mexico Enabling Act (36 Stat. 557) patented on August 26, 1932.

The project area and surrounding 1 km have been subject to nine (9) cultural resource surveys, seven (7) of which are qualifying. No previously recorded sites are located within 1 km of the proposed project area. The project area is entirely located on SLO-managed lands and is covered by one (1) qualifying survey conducted within the last ten years (NMCRIS No. 132233) and disturbance. SWCA consulted with Ethan Ortega, NMSLO, on September 15, 2023, because the inadvertent release area is entirely covered by previously disturbed oil and gas construction activities and one qualifying archaeological survey conducted within the last 10 years. Mr. Ortega confirmed that only an ARMS review is required at this time; if samples and delineation are needed outside of the previously disturbed space, additional survey will be required. SWCA recommends that if all remediation activities including delineation occur within the previously disturbed area, then no additional survey is needed and the completion of an ARMS letter to satisfy the requirements of the NMSLO. If cultural materials are identified during ground disturbing activities, work must stop and the SLO must be contacted. The ARMS review letter is included as Appendix B and was submitted to NMSLO by SWCA.

SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, playa lakes, 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 medium karst potential.

There are no water wells listed in the New Mexico Office of the State Engineer (NMOSE) database located within approximately ½ mile (800 meters) of the Site. According to data from three (3) water wells listed in the NMOSE database within approximately 1.6 miles (2,600 meters) of the Site, the minimum depth to groundwater is 120 feet bgs.

A licensed well drilling subcontractor was onsite on March 1, 2023 to drill a groundwater determination borehole (DTW-1) to 55 feet bgs at the northern edge of the Graham Cracker 16 State #003H lease pad, located approximately 760 feet east of the release Site. The borehole location is indicated on Figure 4. The borehole was temporarily set and screened using 2-inch PVC well materials: 20 feet of blank casing and 35 feet of 0.010” slotted screen. The borehole was left for 72 hours and checked for the presence of groundwater. The borehole was dry upon drilling, and no water was present in the well after 72 hours. The well screen and casing were removed, and the borehole was plugged with 3/8-inch bentonite chips. The site characterization data, boring log, and temporary well diagram are presented in Appendix C.

REGULATORY FRAMEWORK

Based upon the release footprint, the depth to water boring, 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 RRALs for the Site are as follows:

Constituent	RRAL
Chloride	10,000 mg/kg
TPH	2,500 mg/kg
BTEX	50 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	100 mg/kg
BTEX	50 mg/kg

INITIAL SITE ASSESSMENT SUMMARY AND DEFERRAL REQUEST

On June 25, 2018, TRC Environmental Corporation (TRC) conducted an initial soil assessment at the Site on behalf of COG. The release extent provided by TRC includes an overspill area adjacent to the tinhorn that was not described in the initial C-141, as shown on Figure 3.

During the initial soil assessment, one (1) soil boring (HA-1) was installed using a hand auger to a depth of approximately 10 feet below ground surface (bgs) within the tinhorn. Three (3) soil samples (HA-1 @ 6', HA-1 @ 8', and HA-1 @ 10') were collected from the boring and field screened for chloride concentrations. Although field screening values from HA-1 were not reported by TRC, all three soil screening results indicated chloride concentrations that exceeded the proposed NMOCD Closure Criteria of 10,000 mg/kg. On August 17, 2018, a Geoprobe was utilized to install a soil boring (SB-1) in the overspill area adjacent to the tinhorn to determine the vertical extent of soil impact. Three (3) soil samples (SB-1 @ 6', SB-1 @12', and SB-1 @14') were collected and submitted to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for chlorides via EPA Method 300.0. Additional hand auger samples were collected from the overspill area on October 25 (HA-1B @ Surface and HA-1C @ Surface) and submitted to Cardinal Laboratories to be analyzed for BTEX via EPA Method 8021B, TPH via EPA Method 8015M, and chloride via EPA Method 300.0. TRC returned to the Site on November 14, 2018, to collect additional soil samples (HA-1B @ 1' and HA-1C @ 1') to complete vertical delineation of TPH impact. The initial assessment sampling locations are indicated on Figure 3. The initial assessment results are summarized in Table 1.

On July 1, 2019, TRC conducted release remediation activities at the Site. Hand tools were utilized to excavate the impacted overspill area to a depth of approximately 1 foot bgs. Two (2) soil samples (FL-1-1 and FL-2-1) were collected from the base of the excavation in the areas representative of HA-1B @ Surface and HA-1C @ Surface. The excavated area was recontoured to prevent pooling and 100 gallons of Micro-Blaze was applied to the affected area within the tinhorn. The remediation extent and confirmation sample locations are presented in Figure 4. The 2019 soil analytical results are summarized in Table 2.

A Site Assessment Summary and Deferral Request (Deferral Request) describing the Site assessment and remedial activities was submitted to the NMOCD on July 18, 2019. The deferral request was rejected by Brittany Hall via email on Monday, November 28, 2022, 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.*
- *Horizontal delineation submitted was incomplete and did not meet the requirements of 19.15.29.11 NMAC. The values for determination of horizontal impact are derived by either approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less. This is especially important for "on-pad" releases to ensure the release did not extend to the "off-pad"/pasture area. A visual footprint on the surface is not sufficient to assess the horizontal extent of the release. Laboratory data must be provided as evidence of delineation efforts. Any sample exceeding approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less requires additional samples for*

horizontal delineation. No samples were collected in the four cardinal directions of the release to determine the horizontal extents of the release.

- *Vertical delineation needs to be completed to 600ppm chloride, 100ppm TPH, 50 BTEX, and 10ppm Benzene.*
- *Deferral request was denied by NMSLO on January 17, 2019. The email correspondence was uploaded and can be viewed in the incident files.*
- *2RP-4645 closed. Refer to #NAB1806438251 in all future communication.*
- *Please submit a complete report through the OCD Permitting website by 3/3/2023."*

An extension request for a due date of June 3, 2023, was approved via email on Tuesday, February 28, 2023. Regulatory correspondence is included in Appendix D.

ADDITIONAL SITE ASSESSMENT AND DEFFERAL REQUEST

Tetra Tech personnel visited the site on February 6, 2023, to document current site conditions. At the time of the site visit, no surface staining or odor was observed in the vicinity of the tinhorn. Photographic documentation of the visual inspection is presented in Appendix E.

Based on the directive provided by NMOCD, Tetra Tech was onsite on March 1, 2023, to conduct assessment activities on behalf of ConocoPhillips. One additional assessment boring (BH-23-1) was installed using an air rotary drill rig within the release footprint in the pasture to 25 feet bgs to complete vertical delineation of the release extent. Sampling inside of the tinhorn was not feasible at the time of the additional assessment sampling activities, due to safety concerns for personnel working in the immediate vicinity of an active pipeline. Four additional hand auger borings (AH-23-1 through AH-23-4) were installed to 3 feet bgs to the north, east, south, and west of the release footprint to achieve horizontal delineation of the release extent. The groundwater determination borehole (DTW-1) previously discussed in the Site Characterization section of this report was also installed at this time per the NMOCD directive. The sample locations are shown on Figure 4.

A total of fifteen (15) samples were collected from the five assessment borings and submitted to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for TPH by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by method SM4500Cl-B.

The laboratory analytical results from the March 2023 assessment are summarized in Table 3. Analytical results associated with the 0-1 foot and 2-3 ft sample intervals at BH-23-1 exceeded the reclamation requirements for chloride (600 mg/kg). These areas are directly adjacent to the tinhorn. There were no other analytical results which exceeded the Site RRALs or reclamation requirements for any of the analyzed constituents. Horizontal and vertical delineation of the release was achieved as a result of the March 2023 additional assessment activities.

A Release Characterization and Revised Deferral Request (2023 Deferral Request) describing the additional Site assessment was submitted to the NMOCD on March 28, 2023. The deferral request was rejected by Brittany Hall via email on Monday, June 5, 2023, with the following comments:

- *"Deferral denied. Per 19.15.29.12 C. (3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."*
- *Deferrals can be approved for a release occurring on a developed well pad, central tank battery, drilling site, compressor site or other exploration, development, production, or storage sites. Deferrals are for areas that if remediation/reclamation is immediately under or around production equipment such as production tanks, wellheads, and pipelines where remediation could cause a major facility deconstruction per 19.15.29.12 C. (2) NMAC.*
- *Submit a complete report though the OCD Permitting website by 9/5/2023."*

Regulatory correspondence is included in Appendix D.

REMEDIATION WORK PLAN/REVISED DEFERRAL REQUEST

Based on the conditions of the NMOCD rejection of the March 28, 2023 deferral request, Tetra Tech prepared a Remediation Work Plan/Revised Deferral Request dated July 3, 2023 on behalf of ConocoPhillips. In this report, ConocoPhillips proposed to remove the remaining impacted material in the release footprint to a depth of 4 feet bgs or until a representative sample from the walls and bottom of the excavation is below the RRALs. This report included a deferral request for any chloride impacts present within and beneath the tinhorn until the equipment is removed during other operations.

The work plan was approved in an email dated July 28, 2023 with the following conditions:

- *"Deferral is DENIED but the remediation plan has been approved with the following conditions: The locations of SB-1, FL-1-1 and FL-2-1 must be addressed during excavation activities. Analytical results from 2018 show that chloride contamination extends to atleast 6 feet. FL-1-1 and FL-2-1 were above the recalamation requirements for chlorides and TPH at FL-2-1. Chloride contamination at BG-1-23 also must be remediated to the reclamation requirements during remediation activities.*
- *A deferral for the tin horn will not be approved as the OCD does not agree that remediation of this area would result in a major facility deconstruction. Use of a hydrovacuum can be used to facilitate the remediation of this area if warranted. Per 19.15.29.12 C. (3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."*
- *Submit a complete report through the OCD Permitting website by 10/28/2023."*

A copy of the regulatory correspondence is included in Appendix D.

ADDITIONAL REMEDIATION ACTIVITIES AND CONFIRMATION SAMPLING

On September 20, 2023, Tetra Tech sent a request via email to the NMSLO for approval of the initiation of remedial activities at the Site. Tami Knight of the SLO Environmental Compliance Office (ECO) approved remediation activities at the Site via email on September 25, 2023. In accordance with Subsection D of 19.15.29.12 NMAC, Tetra Tech sent the NMOCD an email notice on September 20, 2023 prior to conducting the remedial activities and associated confirmation sampling. Copies of the regulatory correspondence are included in Appendix D.

On September 28, 2023, Tetra Tech personnel were onsite to remediate the release based on the results of the assessment sampling, including excavation, disposal, backfill, and seeding. A hydrovac truck was utilized to remove the top approximate 1-foot of soil within the tinhorn to an approximate depth of 12 feet bgs. The extent of impacted soils in the pasture outside of the tinhorn was confirmed with field soil screening data and then excavated to 6 feet bgs in the northern half of the release extent in the area of SB-1, and to 4 feet bgs in the southern half of the release extent. Photographs from the excavated areas prior to backfill are provided in Appendix E.

All of the excavated material was transported offsite for proper disposal. Approximately thirty-two (32) cubic yards of material were transported to the R360 Halfway Facility in Hobbs, New Mexico. Copies of the waste manifests are included in Appendix F.

Confirmation floor and sidewall samples were collected for laboratory analysis to verify impacted materials were properly removed. Each confirmation sample laboratory analytical result was directly compared to the proposed RRALs to demonstrate compliance. In accordance with Subsection D of 19.15.29.12 NMAC, confirmation samples were collected such that each discrete sample (sidewall and floor) were representative of no more than 200 square feet of excavated area. A total of two (2) floor sample locations and three (3) sidewall sample locations were used during the remedial activities. Confirmation sidewall

sample locations were labeled with “SW”-#, and confirmation floor sample locations were labeled with “FS”-#. Analytical results for all confirmation soil samples (floor and sidewall) were below the applicable Site RRALs and reclamation limits for chloride, BTEX, and TPH. The results of the 2023 confirmation sampling events are summarized in Table 4. Laboratory analytical data is included in Appendix G.

RECLAMATION ACTIVITIES

On September 28, 2023, Tetra Tech personnel were onsite to supervise the reclamation and restoration activities at the site. The land surface was recontoured to reflect the surroundings to the best extent practicable. The unvegetated areas were ripped (once each way, seeded, then dozer track imprinted to aid in revegetation. Areas near the tinhorn exhibiting recolonization and a self-sustaining plant community were left undisturbed. Based on the soils at the site, the NMSLO Loamy (L) seed mix was used for seeding and planted in the amount specified in the pounds pure live seed (PLS) per acre. Photographic documentation of the excavated areas prior to and following reclamation activities are provided in Appendix E.

CONCLUSION

ConocoPhillips respectfully requests closure of the release based on the confirmation sampling results and remediation activities performed. The final C-141 forms are enclosed in Appendix A. If you have any questions concerning the remediation activities for the Site, please call me at (512) 739-7874 or Christian at (512) 288-6281.

Sincerely,
Tetra Tech, Inc.

Samantha K. Abbott
Project Manager

Christian M, Llull, P.G.
Program Manager

cc:
Mr. Moises Cantu-Garcia, GPBU - ConocoPhillips

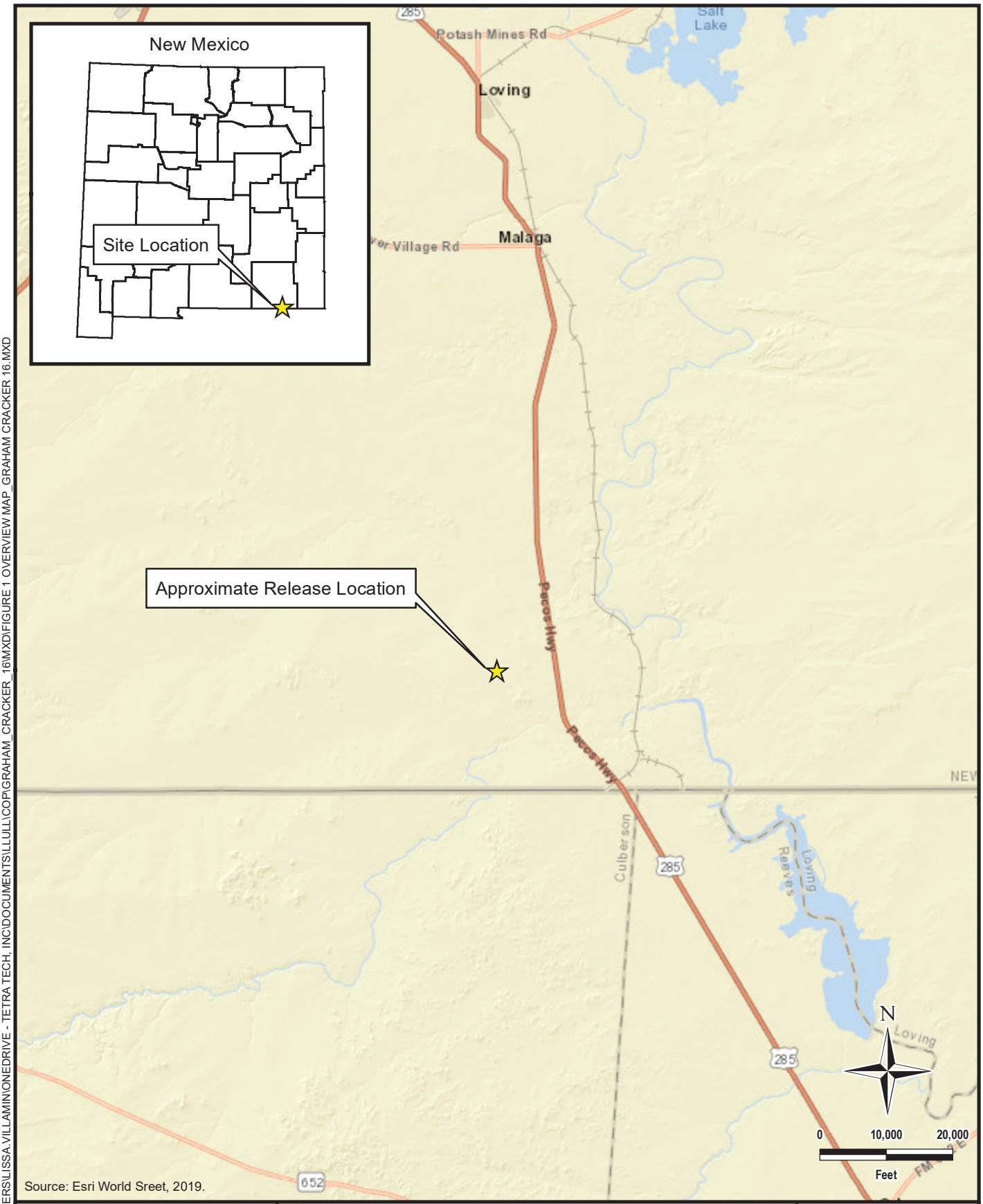
LIST OF ATTACHMENTS

Figures:

Tables:

Appendices:

FIGURES



DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LLULL\COP\GRAHAM_CRACKER_16\MXD\FIGURE 1 OVERVIEW MAP_GRAHAM CRACKER 16.MXD

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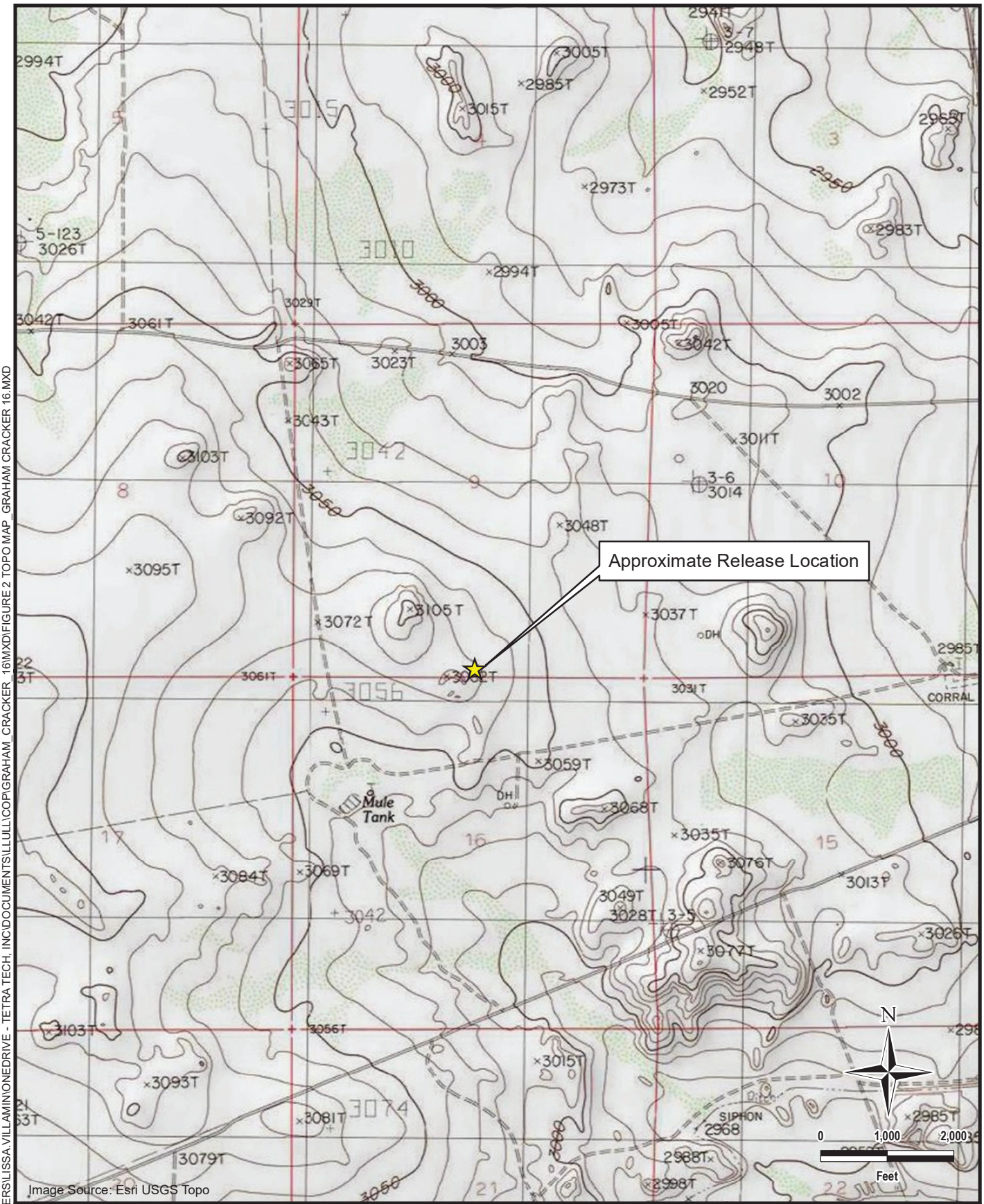
CONOCOPHILLIPS

NAB1806438251
(32.05012°, -104.09246°)
EDDY COUNTY, NEW MEXICO

GRAHAM CRACKER 16 STATE #002H
OVERVIEW MAP

PROJECT NO.:	212C-MD-02989
DATE:	MARCH 13, 2023
DESIGNED BY:	LMV

Figure No.
1



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CONOCOPHILLIPS

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EDDY COUNTY, NEW MEXICO

GRAHAM CRACKER 16 STATE #002H
TOPOGRAPHIC MAP

PROJECT NO.:	212C-MD-02989
DATE:	MARCH 13, 2023
DESIGNED BY:	LMV

Figure No.
2

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CONOCOPHILLIPS

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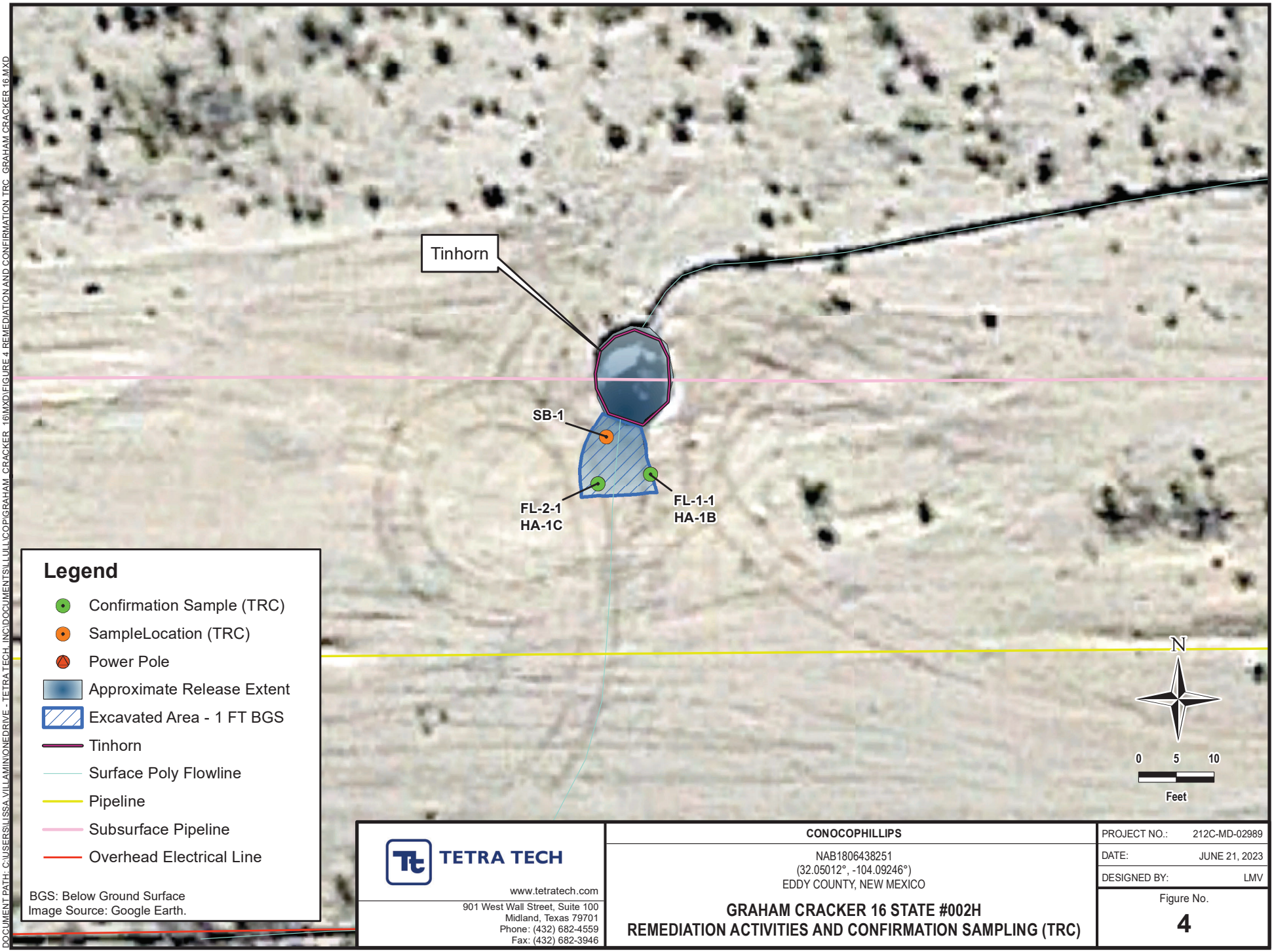
EDDY COUNTY, NEW MEXICO

GRAHAM CRACKER 16 STATE #002H
APPROXIMATE RELEASE EXTENT AND SITE ASSESSMENT (TRC)

PROJECT NO.:	212C-MD-02989
DATE:	JUNE 20, 2023
DESIGNED BY:	LMV

Figure No.
3



DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LULLO\P\GRAHAM_CRACKER_16\MXD\FIGURE 4 REMEDIATION AND CONFIRMATION TRC_GRAHAM CRACKER 16.MXD

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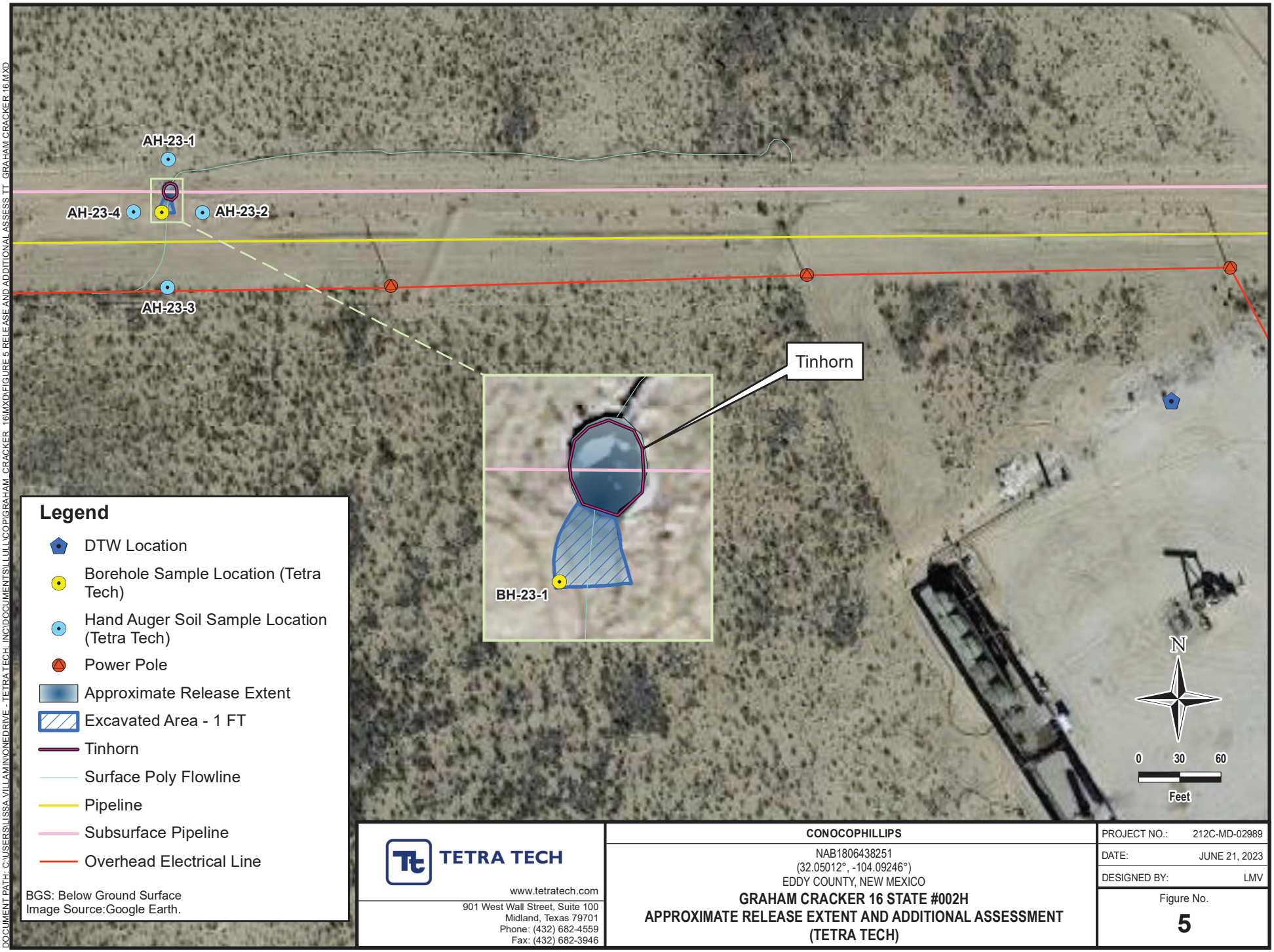
EDDY COUNTY, NEW MEXICO

GRAHAM CRACKER 16 STATE #002H
REMEDIATION ACTIVITIES AND CONFIRMATION SAMPLING (TRC)

PROJECT NO.:	212C-MD-02989
DATE:	JUNE 21, 2023
DESIGNED BY:	LMV

Figure No.
4



Legend

- DTW Location
- Borehole Sample Location (Tetra Tech)
- Hand Auger Soil Sample Location (Tetra Tech)
- Power Pole
- Approximate Release Extent
- Excavated Area - 1 FT
- Tinhorn
- Surface Poly Flowline
- Pipeline
- Subsurface Pipeline
- Overhead Electrical Line

BGS: Below Ground Surface
Image Source:Google Earth.

DOCUMENT PATH: C:\USERS\LISSA.VILLAMIN\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LULLICOP\GRAHAM_CRACKER_16\MXD\FIGURE 5 RELEASE AND ADDITIONAL ASSESS TT_GRAHAM CRACKER 16.MXD

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CONOCOPHILLIPS

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GRAHAM CRACKER 16 STATE #002H
APPROXIMATE RELEASE EXTENT AND ADDITIONAL ASSESSMENT (TETRA TECH)

PROJECT NO.:	212C-MD-02989
DATE:	JUNE 21, 2023
DESIGNED BY:	LMV

Figure No.
5

Legend

- Floor Confirmation Sample Location
- Sidewall Confirmation Sample Location
- Approximate Release Extent
- TT Excavated Area - 4' BGS
- TT Excavated Area - 6' BGS
- Tinhorn
- Surface Poly Flowline
- Pipeline
- Subsurface Pipeline
- Overhead Electrical Line

BGS: Below Ground Surface
Image Source: Google Earth.

DOCUMENT PATH: C:\USERS\LISSA.VILLAMINO\ONEDRIVE - TETRA TECH, INC\DOCUMENTS\LULL\COP\GRAHAM_CRACKER_16\MXD\FIGURE 6 REMEDIATION & CONFIRMATION TT_GRAHAM CRACKER 16.MXD

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EDDY COUNTY, NEW MEXICO

GRAHAM CRACKER 16 STATE #002H
REMEDIATION EXTENT AND CONFIRMATION SAMPLING LOCATIONS (TETRA TECH)

PROJECT NO.:	212C-MD-02989
DATE:	OCTOBER 18, 2023
DESIGNED BY:	LMV

Figure No.
6

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
2018 INITIAL SOIL ASSESSMENT- nAB1806438251
CONOCOPHILLIPS
GRAHAME CRACKER 16 STATE #002H
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]										TPH[3]						
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH
															C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}		(GRO+DRO+EXT DRO)
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg
HA-1B	10/25/2018	SURFACE	368	S-06	<0.050		<0.050		<0.050		<0.150		<0.300		<50.0		8,370		1,950		***10,320***
	11/14/2018	1	NA		NA		NA		NA		NA		NA		<10.0		<10.0		<10.0		-
HA-1C	10/25/2018	SURFACE	***1,570***	S-04	<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		3,470		780		***4,250***
	11/14/2018	1	NA		NA		NA		NA		NA		NA		<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 that were removed during excavation activities.

QUALIFIERS:
S-06 The recovery of this surrogae is ouride control limits due to sample dilution required from high analyte concetration and/or matrix interference's.
S-04 The surragate recovery for this sample is outside of established control limits due to a sample matrix effect.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
2019 ADDITIONAL SOIL ASSESSMENT AND CONFIRMATION SAMPLING - nAB1806438251
CONOCOPHILLIPS
GRAHAM CRACKER 16 STATE #002H
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]														TPH[3]							
					Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylene		Total Xylenes		Total BTEX		GRO		DRO		MRO		Total TPH	
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q
SB-1	8/17/2018	6	***21,500***		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		12	4,910		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
		14	146		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FL-1-1	7/1/2019	1	***871***		<0.00201	U	<0.00201	U	<0.00201	U	<0.00402	U	<0.00201	U	<0.00201	U	<0.00201	U	<15.0	U	<15.0	U	<15.0	U	<15.0	U
FL-2-1	7/1/2019	1	***2,930***		<0.00200	U	<0.00200	U	<0.00200	U	<0.00399	U	<0.00200	U	<0.002	U	<0.002	U	<15.0	U	117	U	<15.0	U	***117***	

NOTES:

ft. Feet
bgs Below ground surface
mg/kg Milligrams per kilogram
TPH Total Petroleum Hydrocarbons
GRO Gasoline range organics
DRO Diesel range organics
MRO Motor Oil range organics
NS Sample not analyzed for parameter
1 EPA Method 300.0
2 EPA Method 8021B
3 Method SW8015 Mod
NA Analyte not analyzed for parameter

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

Shaded rows indicate intervals that were removed during excavation activities.

QUALIFIERS: U Analyte was not detected

TABLE 3
SUMMARY OF ANALYTICAL RESULTS
2023 ADDITIONAL SOIL ASSESSMENT- nAB1806438251
CONOCOPHILLIPS
GRAHAM CRACKER 16 STATE #002H
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Field Screening Results	Chloride[1]		BTEX[2]										TPH[3]						
			Chloride			Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH
																C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}		(GRO+DRO+EXT DRO)
		ft. bgs	ppm	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg
AH-23-1	3/1/2023	0-1	120	32.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		2-3	162	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-2	3/1/2023	0-1	469	32.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		2-3	412	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-3	3/1/2023	0-1	381	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		2-3	507	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
AH-23-4	3/1/2023	0-1	346	16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		2-3	299	48.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
BH-1-23	3/1/2023	0-1	-	***3,080***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		2-3	-	***1,090***		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		4-5	-	1,070		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		7-8	-	528		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		9-10	-	240		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		14-15	-	192		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		19-20	-	80.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
		24-25	-	208		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-

NOTES:

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

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

Shaded rows indicate intervals that were removed during excavation activities.

TABLE 4
SUMMARY OF ANALYTICAL RESULTS
2023 SOIL REMEDIATION - nAB1806438251
CONOCOPHILLIPS
GRAHAM CRACKER 16 STATE #002H
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride[1]		BTEX[2]										TPH[3]						
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH
															C_6 - C_{10}		> C_{10} - C_{28}		> C_{28} - C_{36}		(GRO+DRO+EXT DRO)
		ft. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg
ESW-1	9/26/2023	-	160		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
WSW-1	9/26/2023	-	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
SSW-1	9/26/2023	-	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
FS-1	9/26/2023	4	5,520		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-
FS-2 (6')	9/27/2023	6	3,800		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-

NOTES:

ft. Feet

GRO Gasoline range organics

DRO Diesel range organics

1 Method SM4500Cl-B

2 Method 8021B

3 Method 8015M

APPENDIX A
C-141 Forms

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 02 2018
RECEIVED

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

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1806438251

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: **COG Operating, LLC** (OGRID# 229137)	Contact: **Robert McNeill**
Address: **600 West Illinois Avenue, Midland TX 79701**	Telephone No.: **432-683-7443**
Facility Name: **Graham Cracker 16 State #002H**	Facility Type: **Battery**

Surface Owner: State	Mineral Owner: State	API No.: 30-015-41533

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	9	26S	28E					Eddy

Latitude: 32.050129 **Longitude**: -104.092465 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 25bbls	Volume Recovered: 23bbls
Source of Release: Check Valve	Date and Hour of Occurrence: 2/24/2018	Date and Hour of Discovery: 2/24/2018 2:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Crystal Weaver-NMOCD Tammy Honea-NMSLO	
By Whom? Sheldon Hitchcock	Date and Hour: 2/24/2018 10:16pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A hole formed in a check valve due to internal corrosion. The check valve was replaced.

Describe Area Affected and Cleanup Action Taken.*

The fluid was contained inside of the "tin horn" surrounding the valve. A vacuum truck was dispatched to recover all freestanding fluids. Concho will have the spill area evaluated for any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Sheldon Hitchcock

Printed Name: Sheldon L. Hitchcock

Title: HSE Coordinator

E-mail Address: slhitchcock@concho.com

Date: 3/2/2018 Phone: 575-746-2010

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By

Approval Date: 3/5/18 Expiration Date: N/A

Conditions of Approval: See Attached

Attached ☐ 2RP-4645

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 3/2/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4645 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 4/2/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From: Sheldon Hitchcock <SLHitchcock@concho.com>
Sent: Friday, March 2, 2018 12:56 PM
To: Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; Honea, Tammy
Cc: Rebecca Haskell; Robert McNeill; Dakota Neel; Christopher Gray; DeAnn Grant
Subject: (C-141 Initial) Graham Cracker 16 State #002H (30-015-41533) 2-24-2018
Attachments: (C-141 Initial) Graham Cracker 16 State #002H (30-015-41533) 2-24-2018.pdf

Ms. Weaver/Ms. Honea,

Please find the attached C-141 for your consideration. If you have any questions or concerns please let me know.

Thank you,

Sheldon L. Hitchcock
HSE Coordinator
COG Operating LLC
2407 Pecos Avenue | Artesia, NM 88210
Cell: 575-703-6475 | Office: 575-746-2010
slhitchcock@concho.com

CONCHO

Bratcher, Mike, EMNRD

From: Sheldon Hitchcock <SLHitchcock@concho.com>
Sent: Saturday, February 24, 2018 10:16 PM
To: Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; Honea, Tammy
Cc: Rebecca Haskell; Robert McNeill; Dakota Neel; Christopher Gray
Subject: (Notification) Graham Cracker 16 State #002H (30-015-41533) 2/24/2018

Ms. Weaver/Ms. Honea,

COG Operating, LLC (OGRID # 229137) had a release occur on a flow line associated with the Graham Cracker 16 State #002H battery.

Release location:
Sec 16 Township 26S Range 28E
Lat/long: 32.0502,-104.0925

Estimated Volume Released: >25bbls
Estimated Volume Recovered: 25bbls

COG is having the area evaluated and will submit an initial C-141.

Thank you,

Sheldon Hitchcock
HSE Coordinator

Sent from my IPhone

State of New Mexico
Oil Conservation Division

Incident ID	nAB1806438251
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?	>50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☑ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☑ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☑ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAB1806438251
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: Moises H Cantu Garcia Title: Sr. Environmental Engineer

Signature: Moises H Cantu Garcia Date: 7/3/2023

email: Moises.H.CantuGarcia@conocophillips.com Telephone: +1 (318) 461-5581

OCD Only

Received by: Shelly Wells Date: 7/6/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAB1806438251
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: Moises H Cantu Garcia Title: Sr. Environmental Engineer

Signature: Moises H Cantu Garcia Date: 7/3/2023

email: Moises.H.CantuGarcia@conocophillips.com Telephone: +1 (318) 461-5581

OCD Only

Received by: Shelly Wells Date: 7/6/2023

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

Signature: Brittany Hall Date: 7/28/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAB1806438251
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☑ Description of remediation activities

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

Printed Name: Moises H Cantu Garcia Title: Sr. Environmental Engineer

Signature: Moises H Cantu Garcia Date: 10/24/2023

email: Moises.H.CantuGarcia@conocophillips.com Telephone: +1 (318) 461-5581

OCD Only

Received by: Shelly Wells Date: 10/24/2023

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

Closure Approved by: Brittany Hall Date: 11/2/2022

Printed Name: Brittany Hall Title: Environmental Specialist

APPENDIX B
ARMS Letter

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

7770 Jefferson Street NE, Suite 410
Albuquerque, New Mexico 87109
Tel 505.254.1115 Fax 505.254.1116
www.swca.com

October 4, 2023

TO: Ethan Ortega, Division Director & Archaeologist, New Mexico State Land Office, Santa Fe, New Mexico

FROM: SWCA Environmental Consultants

SUBJECT: Completion of an Archaeological Records Management Section (ARMS) Review for the Graham Cracker 16 State #002H Tinhorn Release Remediation Project on New Mexico State Land Office (NMSLO) lands in Eddy County, NM

Company Ref No: None-Provided

PROJECT DESCRIPTION:

Tetra Tech, Inc. has requested that SWCA Environmental Consultants (SWCA) conduct an Archaeological Resources Management Section (ARMS) review for an inadvertent release in Eddy County, New Mexico. The proposed project is located on lands managed by the New Mexico State Land Office (NMSLO) approximately 39.42 kilometers (24.5 miles) southeast of Carlsbad, NM in T26S R28E, Section 9.

A literature and file search were conducted on September 22, 2023, using the New Mexico Cultural Resources Information System online database which included a review of known cultural resources, such as the built environment, archaeological sites, and State/National Register listed properties. Other sources reviewed include the BLM GLO Records web site, http://www.glorecords.blm.gov, which include land patent and general land office survey data. As this area was not settled by Spain, land grant records were not reviewed. The review was conducted for the Area of Potential Effect (APE) and 1 km surrounding the APE. There are three land patents in the area including, June 21, 1898: New Mexico Territorial Grant (30 Stat. 484) patented on February 6, 1919, June 21, 1898: New Mexico Territorial Grant (30 Stat. 484) patented on June 6, 1922, and June 20, 1910: New Mexico Enabling Act (36 Stat. 557) patented on August 26,1932.

Recommendation:

The project area and surrounding 1 km have been subject to nine (9) cultural resource surveys, seven (7) of which are qualifying. No previously recorded sites are located within 1 km of the proposed project area. The project area is entirely located on SLO-managed lands and is covered by one (1) qualifying survey conducted within the last ten years (NMCRIS No. 132233) and disturbance. SWCA consulted with Ethan Ortega on September 15, 2023, because the inadvertent release area is entirely covered by previously disturbed oil and gas construction activities and one qualifying archaeological survey conducted within the last 10 years. Mr. Ortega confirmed that only an ARMs review is required at this time; if samples and delineation are needed outside of the previously disturbed space, additional survey will be required. SWCA recommends that if all remediation activities including delineation occur within the previously disturbed area, then no additional survey is needed and the completion of an ARMS letter to satisfy the requirements of the NMSLO. If cultural materials are identified during ground disturbing activities, work must stop and the SLO must be contacted.

Information regarding the findings can be found in Tables 1-2 and Figure 1.

Archaeologist

SWCA ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®
7770 Jefferson Street NE, Suite 410
Albuquerque, New Mexico 87109
Tel 505.254.1115 Fax 505.254.1116
www.swca.com

Paisley DeFreese
Attached: (1) Review Results, (1) ARMS Map

Archaeological Resources Management Section (ARMS) Review Results

Table 1. Cultural surveys within 1 km(0.62 miles) of the proposed project.

NMCRIS No.	Performing Organization	Date of Investigation	Acres Surveyed	Sites Visited
121605	Boone Arch Svcs of NM	7/23/2011	144.87	2
125470	Lone Mountain Archaeological Services	7/9/2012	32953.33	357
132233	Statistical Research, Inc.	7/8/2014	9528.07	79
136873	Boone Archaeological Consultants, LLC.	9/30/2016	2.72	0
137110	Boone Archaeological Consultants, LLC.	11/18/2016	8.26	0
137894	Boone Archaeological Consultants, LLC.	4/13/2017	41.23	0
142452	APAC	12/4/2018	151.28	3
146351	Lone Mountain Archaeological Services	8/3/2020	35.78	1
153228	SWCA Environmental Consultants	6/15/2023	2	0

Table 1. Cultural resources within 1 km (0.62 miles) of the proposed project area.

LA No.	Discovering NMCRIS No.	Site Type/Cultural Affiliation and Age	Eligibility	Relationship to APE
174256	125470	Artifact scatter with features/Unknown Aboriginal (9500 B.C.–A.D. 1880)	Not Entered in NMCRIS	Outside

*Redacted

Figure 2. NMCRIS screenshot showing location of the Graham Cracker 16 State #002H Tinhorn Release Remediation Project (red pin and green circle), the 1-km (0.62-mile) buffer area (blue circle), previously conducted investigations (brown and tan polygons), and previously recorded sites (red polygons).

APPENDIX C
Regulatory Correspondence

OCD Land Ownership

10/4/2023, 11:40:42 AM

1:564

0 0 0.01 0.02 mi

0 0.01 0.01 0.02 km

Land Ownership
S

Mineral Ownership
N-No minerals are owned by the U.S.
PLSS Second Division

U.S. BLM, Maxar, Microsoft, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., OCD, Esri, HERE,

New Mexico Oil Conservation Division

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

OCD Waterbodies Map

2/8/2023, 2:08:23 PM

OSW Water Bodys

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

Esri, HERE, Garmin, iPC, Maxar, NM OSE

OCD Karst Potential Map

2/8/2023, 2:09:54 PM

Karst Occurrence Potential

- High
- Medium

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

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

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

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

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

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

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02479	CUB	ED		4	4	10	26S	28E	587909	3546534*	2240	200		
C 02480	CUB	ED		4	4	10	26S	28E	587909	3546534*	2240	150		
C 04022 POD1	CUB	ED	4	4	2	15	26S	28E	588082	3545647	2508	220	175	45
C 02160 S7	CUB	ED	3	3	1	22	26S	28E	586638	3543998*	2546	300	120	180
C 02160 S5	CUB	ED	1	1	1	14	26S	28E	588225	3546237*	2552	300	120	180

Average Depth to Water: **138 feet**

Minimum Depth: **120 feet**

Maximum Depth: **175 feet**

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 585675.62 **Northing (Y):** 3546356.17 **Radius:** 2600

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

212C-MD-02989	TETRA TECH	**LOG OF BORING DTW**	Page 1 of 1

Project Name: Graham Cracker 16 State #002H

Borehole Location: GPS Coordinate: 32.049763°, -104.090109° | Surface Elevation: 3058'

Borehole Number: **DTW** | Borehole Diameter (in.): | Date Started: 3/1/2023 | Date Finished: 3/1/2023

WATER LEVEL OBSERVATIONS

While Drilling ▽ DRY 24 Hours After Completion of Drilling ▽ DRY

Remarks:

DEPTH (ft)	OPERATION TYPES	SAMPLE	CHLORIDE CONCENTRATION (ppm) ExStik	VOC CONCENTRATION (ppm) PID	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT LL	PLASTICITY INDEX PI	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	WELL DIAGRAM
0												**-SC-** CLAYEY SAND: Dark brown, loose, dry, fine grained, partially weakly cemented, with trace Caliche	2	
5												**-SM-** SAND: Light brown, loose, dry, fine grained, with gravel-sized Caliche **--** Transitions to with partially weakly cemented Sand pockets	9	
10												**-SC-** SAND: Light brown to brown, medium dense, dry, fine to medium grained, with loose coarse Sand pockets		
15														
20														
25														
30														
35													34	
40												**-SM-** SAND: Light brown to brown, loose, dry, fine grained, with partially cemented Clayey Sand pockets	44	
45												**-ML-** SAND: Light brown, medium dense, dry, very fine to fine grained, with Clayey Sand pockets	49	
50												**-SM-** SILTY SAND: Light brown, dense, dry, very fine to fine grained, partially cemented, with occasional Clayey Sand seams		
55													55	

Bottom of borehole at 55.0 feet.

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

Operation Types: Auger, Hollow Stem Auger, Air Rotary, Continuous Flight Auger, Direct Push, Mud Rotary, Drive Casing

Notes:
Surface elevation is an estimated value from Google Earth data.

Logger: Lee Scarborough | Drilling Equipment: Air Rotary | Driller: Scarborough Drilling

APPENDIX D
Site Characterization Data

From: OCDOnline@state.nm.us
To: Beauvais, Charles R
Subject: [EXTERNAL]The Oil Conservation Division (OCD) has rejected the application, Application ID: 161556
Date: Monday, November 28, 2022 12:14:30 PM

To whom it may concern (c/o Charles Beauvais for COG OPERATING LLC),

The OCD has rejected the submitted *Internal Manual Incident File Supporting Documentation (ENV)* (IM-BNF), for incident ID (n#) nAB1806438251,
for the following reasons:

- **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.**
- **Horizontal delineation submitted was incomplete and did not meet the requirements of 19.15.29.11 NMAC. The values for determination of horizontal impact are derived by either approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less. This is especially important for "on-pad" releases to ensure the release did not extend to the "off-pad"/pasture area. A visual footprint on the surface is not sufficient to assess the horizontal extent of the release. Laboratory data must be provided as evidence of delineation efforts. Any sample exceeding approved "background" values or Table I Closure Criteria for releases where groundwater is at a depth of 50 feet or less requires additional samples for horizontal delineation. No samples were collected in the four cardinal directions of the release to determine the horizontal extents of the release.**
- **Vertical delineation needs to be completed to 600ppm chloride, 100ppm TPH, 50 BTEX, and 10ppm Benzene.**
- **Deferral request was denied by NMSLO on January 17, 2019. The email correspondence was uploaded and can be viewed in the incident files.**
- **2RP-4645 closed. Refer to #NAB1806438251 in all future communication.**
- **Please submit a complete report through the OCD Permitting website by 3/3/2023.**

The rejected IM-BNF can be found in the OCD Online: Permitting - Action Status, under the Application ID: 161556.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional IM-BNF.

Thank you,
Brittany Hall
Projects Environmental Specialist - A
505-517-5333

Brittany.Hall@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

From: Hall, Brittany, EMNRD
To: Abbott, Sam
Cc: Beauvais, Charles R; Llull, Christian; Chavira, Lisbeth
Subject: RE: [EXTERNAL] Extension Request - Application ID 161556 (Incident ID nAB1806438251)
Date: Tuesday, February 28, 2023 9:44:20 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png

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

Sam,
Your extension request for **nAB1806438251** is approved. The new due date is June 3, 2023.

Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,
Brittany Hall • Environmental Specialist
Environmental Bureau Projects Group
EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87110
505.517.5333 | Brittany.Hall@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd/

From: Abbott, Sam <Sam.Abbott@tetratech.com>
Sent: Tuesday, February 28, 2023 7:54 AM
To: Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>
Cc: Beauvais, Charles R <Charles.R.Beauvais@conocophillips.com>; Llull, Christian <Christian.Llull@tetratech.com>; Chavira, Lisbeth <LISBETH.CHAVIRA@tetratech.com>
Subject: [EXTERNAL] Extension Request - Application ID 161556 (Incident ID nAB1806438251)

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

Ms. Hall:

On behalf of ConocoPhillips, Tetra Tech is requesting a 90-day extension (until June 3, 2023) to complete additional assessment activities and associated reporting for the Graham Cracker 16 State #002H Release site (**nAB1806438251)**.

ConocoPhillips recently received a large volume of NMOCD determinations related to unresolved releases from ConocoPhillips' predecessor-in-interest ("COG") via the *Internal Manual Incident File Supporting Documentation (ENV)* (IM-BNF) process.

Given the difficulties inherent with available resource allocation for several projects with similar

deadlines within a short period of time, this extension is required to safely complete the additional assessment. ConocoPhillips plans to conduct the additional assessment in the coming month however, and once the sampling data is collected, tabulated, and evaluated, a revised report will be submitted to the OCD.

Please let me know if you have any questions or concerns.

Sam

Samantha Abbott, PG | Project Manager
Direct Mobile **+1 (512) 739-7874** | Business **+1 (512) 338-1667** | Sam.Abbott@tetratech.com

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8911 N Capital of Texas Hwy #2310 | Austin, TX 78759 | tetratech.com

From: OCDOnline@state.nm.us
To: Llull, Christian
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 201907
Date: Monday, June 5, 2023 4:03:44 PM

To whom it may concern (c/o Christian Llull for COG OPERATING LLC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAB1806438251,
for the following reasons:

- **Deferral denied. Per 19.15.29.12 C.(3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."**
- **Deferrals can be approved for a release release occurring on a developed well pad, central tank battery, drilling site, compressor site or other exploration, development, production or storage sites. Deferrals are for areas that if remediation/reclamation is immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction per 19.15.29.12 C.(2) NMAC.**
- **Submit a complete report though the OCD Permitting website by 9/5/2023.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 201907.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Brittany Hall
Projects Environmental Specialist - A
505-517-5333
Brittany.Hall@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

From: Llull, Christian
To: Abbott, Sam
Subject: Fwd: The Oil Conservation Division (OCD) has approved the application, Application ID: 236248
Date: Friday, July 28, 2023 11:06:31 AM

Graham Cracker 16 State #002H Tinhorn Release
Eddy County, NM
Approximate Release Location: 32.05012°, -104.09246°
nOY1823239315

Christian

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Friday, July 28, 2023 11:02:22 AM
To: Llull, Christian <Christian.Llull@tetratech.com>
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 236248

To whom it may concern (c/o Christian Llull for COG OPERATING LLC),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAB1806438251, with the following conditions:

- **Deferral is DENIED but the remediation plan has been approved with the following conditions: The locations of SB-1, FL-1-1 and FL-2-1 must be addressed during excavation activities. Analytical results from 2018 show that chloride contamination extends to atleast 6 feet. FL-1-1 and FL-2-1 were above the recalamation requirements for chlorides and TPH at FL-2-1. Chloride contamination at BG-1-23 also must be remediated to the reclamation requirements during remediation activities.**
- **A deferral for the tin horn will not be approved as the OCD does not agree that remediation of this area would result in a major facility deconstruction. Use of a hydrovacuum can be used to facilitate the remediation of this area if warranted. Per 19.15.29.12 C. (3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."**
- **Submit a complete report through the OCD Permitting website by 10/28/2023.**

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,

Brittany Hall
Projects Environmental Specialist - A
505-517-5333
Brittany.Hall@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

From: Rodgers, Scott, EMNRD
To: Chavira, Lisbeth; Hall, Brittany, EMNRD; Bratcher, Michael, EMNRD
Cc: Abbott, Sam
Subject: RE: [EXTERNAL] Incident ID: nAB1806438251 - Confirmation Sampling
Date: Wednesday, September 20, 2023 4:43:26 PM
Attachments: image006.png
image008.png
image009.png
image010.png
image011.png

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Scott Rodgers ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.469.1830 | scott.rodgers@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Chavira, Lisbeth <LISBETH.CHAVIRA@tetratech.com>
Sent: Wednesday, September 20, 2023 3:24 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Abbott, Sam <Sam.Abbott@tetratech.com>
Subject: [EXTERNAL] Incident ID: nAB1806438251 - Confirmation Sampling

Incident ID (n#) **nAB1806438251** (Graham Cracker 16 State #002H Tinhorn Release)

To whom it may concern,

In accordance with Subsection D of 19.15.29.12 NMAC, the responsible party must verbally notify the appropriate division district office prior to conducting confirmation sampling.

Remediation activities of the release will begin Monday, September 25, 2023.

Thus, on behalf of ConocoPhillips for the above referenced incident, Tetra Tech is duly providing this communication which serves as notification that final confirmation sampling will be conducted at this site on **Monday, September 25, 2023.**

NOTE: If you have any questions regarding this sampling schedule, please contact me.

Thank you,

Lisbeth Chavira | Staff Geoscientist
Direct Mobile **+1 (512) 596-8201** | Lisbeth.chavira@tetratech.com

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

From: Knight, Tami C.
To: Chama, Sam; Griffin, Becky R.; SLO Spills; Barnes, Will
Cc: Llull, Christian; Chavira, Lisbeth; Abbott, Sam; Poole, Nicholas
Subject: RE: Graham Cracker 16 State #002H Tinhorn Release - Remediation Approved
Date: Monday, September 25, 2023 12:07:55 PM
Attachments: image006.jpg
image007.jpg
image008.jpg
image009.jpg
image010.png
image011.png
image012.png
image013.png
image014.png

Sam

ECO approves the remediation and reclamation plan for the subject release.

Thank you

Tami Knight, CHMM
Environmental Specialist
SRD-Environmental
Compliance Office (ECO)
505.670.1638
New Mexico State Land Office
1300 W. Broadway Avenue, Suite A
Bloomfield, NM 87413
tknight@slo.state.nm.us
nmstatelands.org

From: Chama, Sam <SAM.CHAMA@tetratech.com>
Sent: Wednesday, September 20, 2023 3:26 PM
To: Griffin, Becky R. <bgriffin@slo.state.nm.us>; SLO Spills <spills@slo.state.nm.us>; Barnes, Will <wbarnes@slo.state.nm.us>
Cc: Llull, Christian <Christian.Llull@tetratech.com>; Chavira, Lisbeth <LISBETH.CHAVIRA@tetratech.com>; Abbott, Sam <Sam.Abbott@tetratech.com>; Poole, Nicholas

<NICHOLAS.POOLE@tetratech.com>
Subject: [EXTERNAL] FW: Graham Cracker 16 State #002H Tinhorn Release - Remediation
Importance: High

Hello Becky and Will,

I attempted to reach out to Tami, but found she was out of office. Please see the below information and attached report for review. This is a site with an Agree Compliance Order (ACO) between the operator (Concho) and the NMOCD.

Thank you,
Sam Chama, G.I.T. | Staff Geologist
Mobile **+1 (509) 768-2191** | Business **+1 (512) 338-1667** | Fax **+1 (512) 338-1331** | sam.chama@tetratech.com
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8911 N. Capital of Texas Highway | Bldg. 2, Suite 2310 | Austin, TX 78759 | tetratech.com

---

From: Chama, Sam
Sent: Wednesday, September 20, 2023 4:09 PM
To: Knight, Tami C. <tknight@slo.state.nm.us>
Cc: Llull, Christian <Christian.Llull@tetratech.com>; Abbott, Sam <Sam.Abbott@tetratech.com>; Chavira, Lisbeth <LISBETH.CHAVIRA@tetratech.com>; Poole, Nicholas <NICHOLAS.POOLE@tetratech.com>
Subject: Graham Cracker 16 State #002H Tinhorn Release - Remediation
Importance: High

Hello ECO and Tami,

This email is regarding the Graham Cracker 16 State #002H Tinhorn Release. This is a Site with an agreed compliance order between the New Mexico Oil Conservation Division (NMOCD) and COG Operating LLC (signed by COG Operating LLC on November 9, 2018).

The remediation is planned for next week. The remediation will be executed in line with the proposed work plan approved, with conditions, by the NMOCD. Site details and background are below. The expected timeline for the remediation is to be completed within 3 days.

Graham Cracker 16 State #002H Tinhorn Release
Eddy County, NM
Approximate Release Location: 32.05012°, -104.09246°

Date Release Discovered: 2/24/2018
Incident ID: nAB1806438251

BACKGROUND:

- According to the NMOCD C-141 Initial Report, the release was caused by a hole that formed in a check valve due to internal corrosion.
- The C-141 reports that the release was contained inside of the tinhorn surrounding the valve.
- Approximately 25 barrels (bbls) of produced water were released, of which approximately 23 bbls of produced water were recovered with a vacuum truck

ASSESSMENT:

- On March 1, 2023, Tech personnel mobilized to the site and conducted assessment sampling.
- One boring and four hand auger borings were installed to achieve vertical and horizontal delineation.
- A DTW to 55' ft was also installed during assessment activities.
- Tera Tech submitted a Remediation Work Plan on July 3, 2023 and received a response from NMOCD via email on July 28, 2023 with the following comments:
    - Deferral is DENIED but the remediation plan has been approved with the following conditions: The locations of SB-1, FL-1-1 and FL-2-1 must be addressed during excavation activities. Analytical results from 2018 show that chloride contamination extends to atleast 6 feet. FL-1-1 and FL-2-1 were above the recalamation requirements for chlorides and TPH at FL-2-1. Chloride contamination at BG-1-23 also must be remediated to the reclamation requirements during remediation activities.
    - A deferral for the tin horn will not be approved as the OCD does not agree that remediation of this area would result in a major facility deconstruction. Use of a hydrovacuum can be used to facilitate the remediation of this area if warranted. Per 19.15.29.12 C. (3) "The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC."
    - Submit a complete report through the OCD Permitting website by 10/28/2023.

REMEDIATION

- The impacted material will be removed, excavating to a maximum depth of 4 feet below the surrounding grade.
    - Confirmation samples will be collected and backfill will not take place until representative samples from the walls and bottom of the excavated area are below Site RRALs.
        - Confirmation bottom and sidewall samples will be representative of no more than 200 square feet and will be collected for verification of remedial activities.
            - Collected confirmation soil samples will be analyzed for TPH, BTEX, and chlorides.
        - Select areas containing pressurized lines will be hand-dug to a depth of 4 feet or to the maximum extent practicable.

The approximate volume of material to be remediated is 30 cubic yards.

- The area outside the tinhorn will be seeded with the SLO Loam (L) seed mixture.

Thank you,

Sam Chama, G.I.T. | Staff Geologist
Mobile **+1 (509) 768-2191** | Business **+1 (512) 338-1667** | Fax **+1 (512) 338-1331** | sam.chama@tetratech.com
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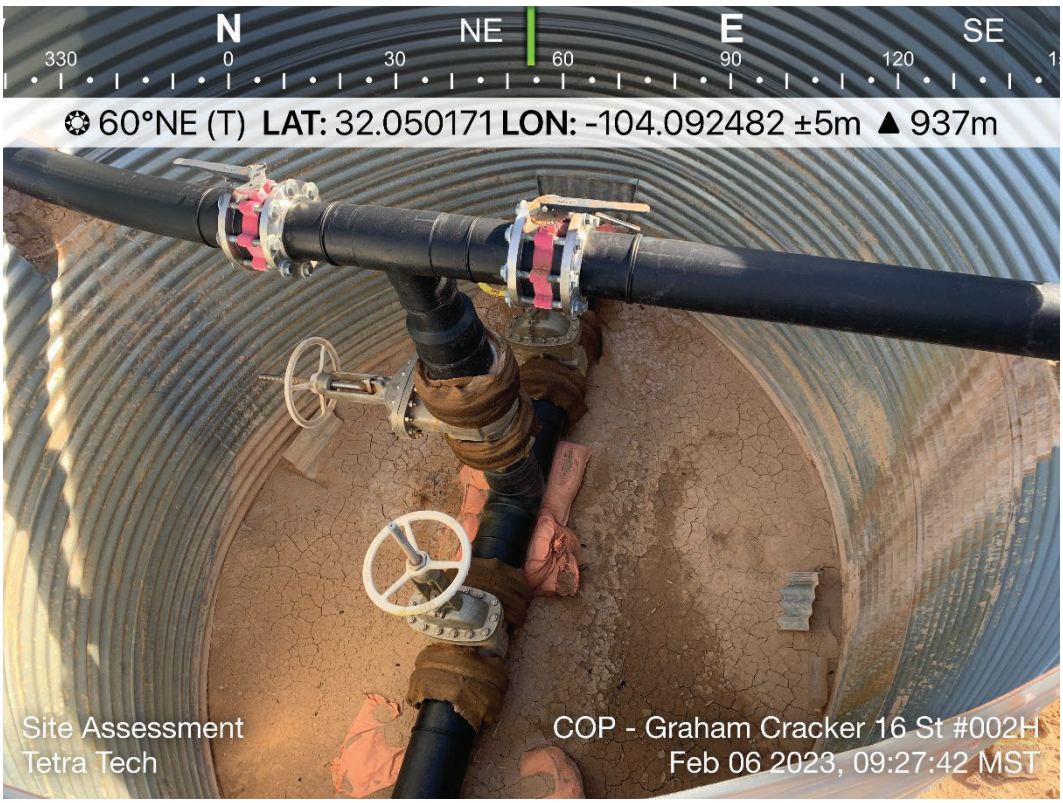
8911 N. Capital of Texas Highway | Bldg. 2, Suite 2310 | Austin, TX 78759 | tetratech.com

APPENDIX E
Photographic Documentation

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View north/northwest of tin horn northeast of lease pad.	1
	SITE NAME	Graham Cracker 16 St #002H	2/6/2023



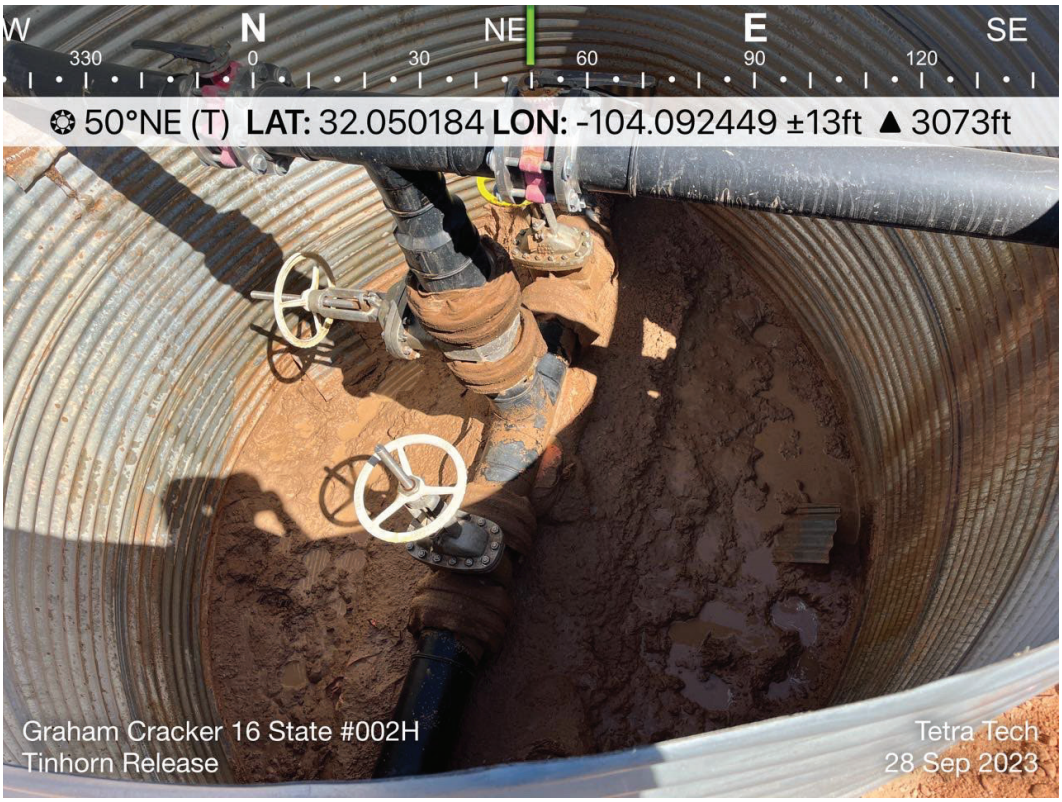
TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View inside of tin horn northeast of lease pad.	2
	SITE NAME	Graham Cracker 16 St #002H	2/6/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View north/northwest of tin horn northeast of lease pad.	3
	SITE NAME	Graham Cracker 16 St #002H	2/6/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View east/southeast of surface polylines and overhead power lines.	4
	SITE NAME	Graham Cracker 16 St #002H	2/6/2023

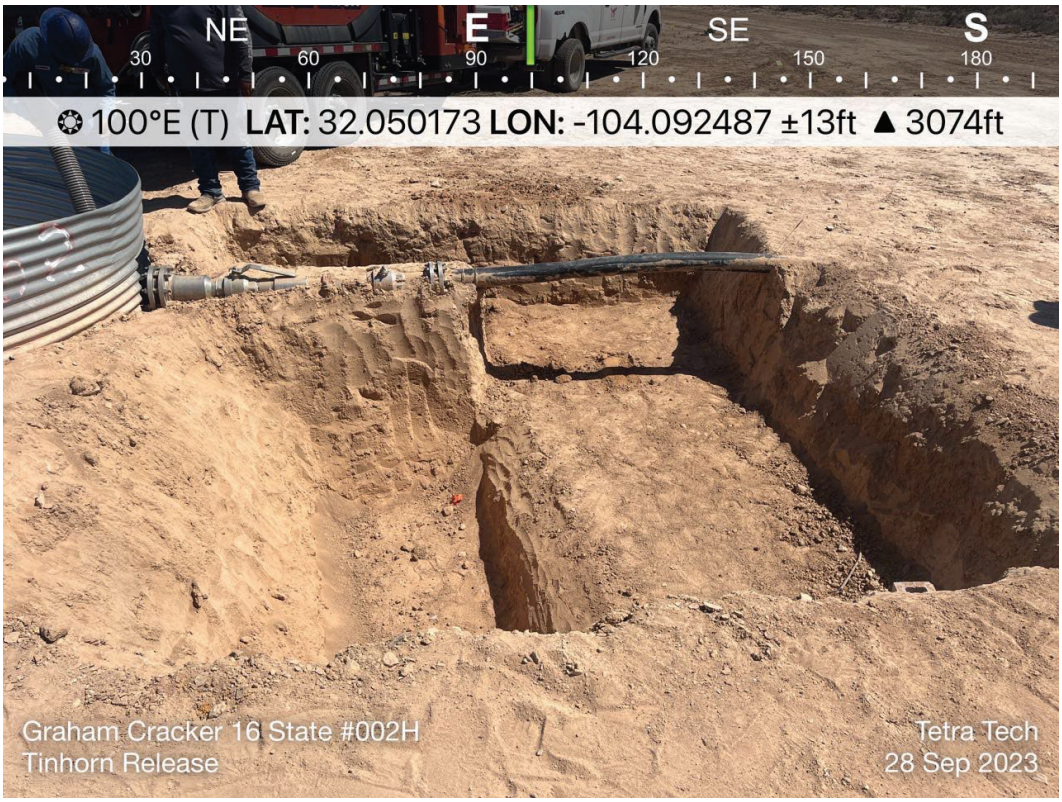
TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View south/southwest of subsurface pipelines and overhead power lines.	5
	SITE NAME	Graham Cracker 16 St #002H	2/6/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View north-northeast of subsurface pipeline.	6
	SITE NAME	Graham Cracker 16 St #002H	2/6/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View inside of tin horn northeast of lease pad.	7
	SITE NAME	Graham Cracker 16 St #002H	9/28/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View southeast of open excavation. Surface poly flowline.	8
	SITE NAME	Graham Cracker 16 St #002H	9/28/2023



TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View east of open excavation. Surface poly flowline.	9
	SITE NAME	Graham Cracker 16 St #002H	9/28/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	NM SLO Loam (L) seed mix.	10
	SITE NAME	Graham Cracker 16 St #002H	9/28/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View north of reclamation activities.	11
	SITE NAME	Graham Cracker 16 St #002H	9/28/2023

TETRA TECH, INC. PROJECT NO. 212C-MD-02989	DESCRIPTION	View northwest of backfilled and seeded area.	12
	SITE NAME	Graham Cracker 16 St #002H	9/28/2023

APPENDIX F
Waste Manifests

R360 ENVIRONMENTAL SOLUTIONS

TEXAS NON-HAZARDOUS OILFIELD WASTE MANIFEST

(PLEASE PRINT) *REQUIRED INFORMATION*

Company Man Contact Information
Name
Phone No.

GENERATOR

NO. 306580

Operator No.
Operators Name: Conoco P...
Address
City, State, Zip
Phone No.

Permit/PPC No.
Lease/Well Name & No.: Lrhedm Craker 16 State H 002 H
County
API No.: 30-015-41533
Rig Name & No.
AFE/PO No.

EXEMPT E&P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)

Oil Based Muds		NON-INJECTABLE WATERS	OTHER EXEMPT WASTES (type and generation process of the waste)
Oil Based Cuttings		Washout Water (Non-Injectable)	
Water Based Muds		Completion Fluid/Flow Back (Non-Injectable)	Dump Truck
Water Based Cuttings		Produced Water (Non-Injectable)	
Produced Formation Solids		Gathering Line Water/Waste (Non-Injectable)	
Tank Bottoms		INTERNAL USE ONLY	
E&P Contaminated Soil	✓	Truck Washout (exempt waste)	
Gas Plant Waste			

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

NON-EXEMPT E&P Waste/Service Identification and Amount
All non-exempt E&P waste must be analysed and be below threshold limits for toxicity (TCLP), Ignitability, Corrosivity adn Reactivity.

Non-Exempt Other *please select from **Non-Exempt Waste List** on back

QUANTITY B-BARRELS Y-YARDS 16 E-EACH

I hereby certify that the above listed material(s), is (are) not hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulation.

☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operation and are not mixed with non-exempt waste (R360 Accepts certifications on a per load basis only)

☐ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

(PRINT) AUTHORIZED AGENTS SIGNATURE DATE SIGNATURE

TRANSPORTER

Transporter's Name: McNabb Pa...
Address
Phone No.: 575-397-0050

Driver's Name
Phone No.
Truck No.: M-76
WHP No.

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE: 9-19-23 DRIVER'S SIGNATURE DELIVERY DATE: 9-28-23 DRIVER'S SIGNATURE

TRUCK TIME STAMP
IN: OUT:

DISPOSAL FACILITY

RECEIVING AREA
Name/No.

Site Name/ Permit No.: **Red Bluff Facility / STF-065**
Address: **5053 US Hwy 285, Orla, TX 79770**
Phone No.: **432-448-4239**

NORM READINGS TAKEN? (Circle One) YES NO If YES, was reading > 50 micro roentgents? (Circle One) YES NO
NORM (mR/hr)

TANK BOTTOMS

	Feet	Inches
1st Guage		
2nd Guage		
Received		

BS&W Received		BS&W (%)	
Free Water			
Total Received			

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?

NAME (PRINT) DATE TITLE SIGNATURE

onc@northstarforms.com
877-499-0492

White - ORIGINAL Blue- TRANSPORTER Yellow - GENERATOR 308.R360-5160R

R360 ENVIRONMENTAL SOLUTIONS

TEXAS NON-HAZARDOUS OILFIELD WASTE MANIFEST

(PLEASE PRINT) *REQUIRED INFORMATION*

Company Man Contact Information
Name
Phone No.

GENERATOR

NO. 361508

Operator No.
Operators Name: Conoco
Address
City, State, Zip
Phone No.

Permit/PPC No.
Lease/Well Name & No.: #002H Loch Ness Federal State Com
County
API No.: 30-015-41533
Rig Name & No.
AFE/PO No.

EXEMPT E&P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)

		NON-INJECTABLE WATERS		OTHER EXEMPT WASTES (type and generation process of the waste)
Oil Based Muds		Washout Water (Non-Injectable)		Dump Truck
Oil Based Cuttings		Completion Fluid/Flow Back (Non-Injectable)		
Water Based Muds		Produced Water (Non-Injectable)		
Water Based Cuttings		Gathering Line Water/Waste (Non-Injectable)		
Produced Formation Solids		INTERNAL USE ONLY		
Tank Bottoms		Truck Washout (exempt waste)		
E&P Contaminated Soil	✓			
Gas Plant Waste				

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

NON-EXEMPT E&P Waste/Service Identification and Amount
All non-exempt E&P waste must be analysed and be below threshold limits for toxicity (TCLP), Ignitability, Corrosivity adn Reactivity.

Non-Exempt Other *please select from **Non-Exempt Waste List** on back

QUANTITY B-BARRELS Y-YARDS 16 E-EACH

I hereby certify that the above listed material(s), is (are) not hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulation.

☐ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operation and are not mixed with non-exempt waste (R360 Accepts certifications on a per load basis only)

☐ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Other (Provide Description Below)

Andrew Garcia
(PRINT) AUTHORIZED AGENTS SIGNATURE DATE SIGNATURE

TRANSPORTER

Transporter's Name: McNabb Partners
Address
Phone No.: 575-397-0050

Driver's Name: Lumer R.
Phone No.
Truck No.: M-36
WHP No.

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

9-28-23 [signature] 9-28-23 [signature]
SHIPMENT DATE DRIVER'S SIGNATURE DELIVERY DATE DRIVER'S SIGNATURE

DISPOSAL FACILITY

TRUCK TIME STAMP
IN: 11:40 OUT:

RECEIVING AREA
Name/No.: D1

Site Name/Permit No.: **Red Bluff Facility / STF-065**
Address: **5053 US Hwy 285, Orla, TX 79770**
Phone No.: **432-448-4239**

NORM READINGS TAKEN? (Circle One) YES NO
If YES, was reading > 50 micro roentgents? (Circle One) YES NO
NORM (mR/hr) 8

TANK BOTTOMS

	Feet	Inches
1st Guage		
2nd Guage		
Received		

		BS&W (%)
BS&W Received		
Free Water		
Total Received		

I hereby certify that the above load material has been (circle one): ACCEPTED DENIED If denied, why?

Jorge Cruz 9/28/23 [signature]
NAME (PRINT) DATE TITLE SIGNATURE

Lumer R.

donc@northstarforms.com White - ORIGINAL Blue- TRANSPORTER Yellow - GENERATOR 308.R360-5160R

APPENDIX G
Laboratory Analytical Data

CARDINAL Laboratories

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

September 27, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: GRAHAM CRACKER 16 STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 09/26/23 16:20.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/26/2023	Sampling Date:	09/26/2023
Reported:	09/27/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO., NM		

Sample ID: ESW - 1 (H235255-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.95	97.7	2.00	0.719	
Toluene*	<0.050	0.050	09/27/2023	ND	2.06	103	2.00	0.722	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	2.25	112	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.88	98.0	6.00	0.806	
Total BTEX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *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	09/27/2023	ND	432	108	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane *84.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *97.5 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/26/2023	Sampling Date:	09/26/2023
Reported:	09/27/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO., NM		

Sample ID: WSW - 1 (H235255-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.95	97.7	2.00	0.719	
Toluene*	<0.050	0.050	09/27/2023	ND	2.06	103	2.00	0.722	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	2.25	112	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.88	98.0	6.00	0.806	
Total BTEX	<0.300	0.300	09/27/2023	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	**16.0**	16.0	09/27/2023	ND	432	108	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane *86.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *97.3 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/26/2023	Sampling Date:	09/26/2023
Reported:	09/27/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO., NM		

Sample ID: SSW - 1 (H235255-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.95	97.7	2.00	0.719	
Toluene*	<0.050	0.050	09/27/2023	ND	2.06	103	2.00	0.722	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	2.25	112	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.88	98.0	6.00	0.806	
Total BTEX	<0.300	0.300	09/27/2023	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	<16.0	16.0	09/27/2023	ND	432	108	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane *81.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *92.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/26/2023	Sampling Date:	09/26/2023
Reported:	09/27/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Tamara Oldaker
Project Location:	COP - EDDY CO., NM		

Sample ID: FS - 1 (H235255-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.95	97.7	2.00	0.719	
Toluene*	<0.050	0.050	09/27/2023	ND	2.06	103	2.00	0.722	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	2.25	112	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.88	98.0	6.00	0.806	
Total BTEX	<0.300	0.300	09/27/2023	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	**5520**	16.0	09/27/2023	ND	432	108	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane *81.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *92.4 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	ConocoPhillips
Project Manager:	Christian Llull
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	212C-MD-02989 Project Owner:
Project Name:	Graham Cracker 16 State #002
Project Location:	Eddy Co, NM
Sampler Name:	Andrew Garcia

BILL TO

P.O. #:	
Company:	Tetra Tech
Attn:	Christian Llull
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE (2023)	TIME	TPH	BTEX	Chlorides 4500
H235255																	
1	ESW-1	G	1			X					X		26 Sept	900	X	X	X
2	WSW-1													1000			
3	SSW-1													1100			
4	FS-1													1200			

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:	Date: 26 Sept 23	Received By:	
Andrew Garcia	Time: 14:15		
Relinquished By:	Date: 9-26-23	Received By:	
	Time: 1620	Tamara Oldaker	

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:

REMARKS: Nicholas.Poole@tetratech.com
Christian.Llull@tetratech.com
Sam.Abbott@tetratech.com

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

Observed Temp. °C 4.0
Corrected Temp. °C

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

CHECKED BY: (Initials) TO

Turnaround Time: Standard ☐ Rush ☑ 24Hrs

Thermometer ID #140
Correction Factor 0°C

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

FORM-006 R 3.4 07/11/23

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

CARDINAL Laboratories

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

September 28, 2023

CHRISTIAN LLULL

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: GRAHAM CRACKER 16 STATE #002H

Enclosed are the results of analyses for samples received by the laboratory on 09/27/23 15:45.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	09/27/2023	Sampling Date:	09/27/2023
Reported:	09/28/2023	Sampling Type:	Soil
Project Name:	GRAHAM CRACKER 16 STATE #002H	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 02989	Sample Received By:	Dionica Hinojos
Project Location:	COP - EDDY CO., NM		

Sample ID: FS - 2 (6') (H235276-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/28/2023	ND	1.94	97.2	2.00	4.30	
Toluene*	<0.050	0.050	09/28/2023	ND	1.97	98.4	2.00	5.07	
Ethylbenzene*	<0.050	0.050	09/28/2023	ND	1.94	96.9	2.00	5.05	
Total Xylenes*	<0.150	0.150	09/28/2023	ND	5.84	97.3	6.00	6.18	
Total BTEX	<0.300	0.300	09/28/2023	ND					

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

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3800**	16.0	09/28/2023	ND	432	108	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	09/28/2023	ND	193	96.6	200	0.480	
DRO >C10-C28*	<10.0	10.0	09/28/2023	ND	189	94.4	200	2.05	
EXT DRO >C28-C36	<10.0	10.0	09/28/2023	ND					

Surrogate: 1-Chlorooctane *105 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *106 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Tetra Tech
Project Manager:	Christian Llull
Address:	
City:	State: Zip:
Phone #:	Fax #:
Project #:	212C-MD-02989 Project Owner:
Project Name:	Graham Cracker 16 State #002H
Project Location:	Eddy Co, NM
Sampler Name:	Andrew Garcia

BILL TO

P.O. #:	
Company:	TetraTech
Attn:	Christian Llull
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides 4500	TPH	BTEX
H235276													2023				
1	FS-2 (6')	G	1			X					X		27 Sept	1200	X	X	X

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 consequental 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:	Date: 27 Sept 23	Received By:	
	Time: 1545		
Relinquished By:	Date:	Received By:	
	Time:		

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

Christian.Llull@tetratech.com

REMARKS:

Sam.Abbott@tetratech.com
Lisbeth.Chavira@tetratech.com

Delivered By: (Circle One)	Observed Temp. °C 4.6	Sample Condition Cool / Intact	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☒
Sampler - UPS - Bus - Other:	Corrected Temp. °C	☒ Yes ☐ Yes ☐ No ☐ No	DA	Thermometer ID #140 Correction Factor 0°C 24 HR

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

FORM-006 R 3.4 07/11/23

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

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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 278917

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 278917
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Closure approved. Site will need to meet the requirements of 19.15.29.13 NMAC.	11/2/2023