



February 5, 2026

New Mexico Oil Conservation Division

1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Remediation Work Plan
Western CDP
Incident Number nAPP2519241839
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this *Remediation Work Plan (Work Plan)* to document assessment and soil sampling activities at the Western CDP (Site). The purpose of the Site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of crude oil onto the facility pad. The following *Work Plan* describes Site assessment and soil sampling activities completed, and proposes the installation of a soil boring to investigate depth to groundwater to confirm the Closure Criteria and excavation accordingly.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit A, Section 09, Township 26 South, Range 30 East, in Eddy County, New Mexico (32.06373°, -103.88055°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

On July 10, 2025, equipment failure along a pipeline resulted in the release of approximately 145 barrels (bbls) of crude oil onto the pad surface. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; 140 bbls of crude oil were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via Notification of Release (NOR) and submitted an Initial C-141 Application (C-141) on July 11, 2025. The release was assigned Incident Number nAPP2519241839.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented below. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on data from a United States Geological Survey (USGS) Well 320355103524001. The well was last measured on February 18, 1959, and indicated an approximate depth to groundwater of 164 feet bgs. The Well Log is included in Appendix A.

Due to the age of the data, a pedestrian survey of the area was completed on January 30, 2026, and confirmed no wells exist today within 1,000 feet of the Site. Photographic documentation from the pedestrian survey is included in a Photographic Log in Appendix B shown as photographs 6 through 8.

In order to confirm depth to groundwater is greater than 100 feet bgs at the Site, XTO proposes to advance a soil boring to a depth of 110 feet bgs. The soil boring will be located within 0.5 miles of the Site, and a field geologist will log and describe soils continuously. The soil boring will be left open for over 72 hours to allow for equilibration of groundwater levels within the temporary boring casing. After the 72-hour waiting period, depth to groundwater will be assessed and the soil boring will be backfilled following New Mexico Office of the State Engineer (NMOSE) approved procedures. A well record or soil boring log will be included in the subsequent *Closure Report*.

The closest continuously flowing or significant watercourse to the Site is a dry seasonal riverine, located approximately 1,394 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site overlies geologic units mapped as having medium karst potential, which may be associated with unstable geologic conditions. However, a karst survey conducted by a BLM-approved karst specialist was completed at the Site in September 2025 and determined no surficial karst features exist within the survey boundary and subsurface conditions appear to be stable. The karst survey report is included as Appendix C.

Based on the results of the Site Characterization, and assuming the soil boring confirms regional depth to groundwater is greater than 100 feet bgs, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

SITE ASSESSMENT AND DELINEATION ACTIVITIES

On July 22, 2025, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the C-141 and visual observations and to complete delineation activities. Two delineation potholes (PH01 and PH02) were collected within the release extent and advanced to a maximum depth of 6 feet bgs. Discrete delineation soil samples were collected from each pothole at depths ranging from 0.5 feet bgs to 6 feet bgs. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations for the boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix B.

Between October 2 and October 3, 2025, Ensolum personnel returned to the Site to complete lateral delineation of the release. Ten delineation soil samples (SS01 through SS10) were collected around the release extent from a depth of approximately 0.5 feet bgs. Soil samples were field screened for VOCs and chloride in the same manner described above. The delineation soil sample locations are depicted on Figure 2.

All delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following contaminants of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following Standards Method SM4500Cl-B.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples PH01 and PH02, collected from a depth of 0.5 feet bgs and 2 feet bgs respectively, indicated that the soil contained concentrations of TPH and TPH-GRO/TPH-DRO exceeding the proposed Closure Criteria. The soil sample from PH01 collected from a depth of 0.5 feet bgs also contained BTEX in excess of the proposed Closure Criteria. Laboratory analytical results for all other delineation soil sample depths collected at PH01 and PH02 as well as delineation soil samples SS01 through SS10 indicated all COC concentrations were compliant with the proposed Closure Criteria. Laboratory analytical results are summarized in Table 1, and the complete laboratory analytical reports are included as Appendix D.

PROPOSED REMEDIATION WORK PLAN

The delineation soil sampling results indicate soil containing elevated TPH and BTEX concentrations exist on pad across an approximate 13,300 square foot area and extend to an estimated depth of 2 feet bgs. As such, XTO proposes to complete the following remediation activities:

- A temporary soil boring will be advanced within 0.5 miles of the Site to confirm regional depth to groundwater is greater than 100 feet bgs, as described above.
 - If the soil boring indicates regional depth to groundwater is less than 100 feet bgs, the applicable Table I Closure Criteria will be applied to the remediation activities.
- Excavation of impacted soil to a depth of 2 feet bgs. Excavation will proceed until confirmation soil samples confirm all COC concentrations are compliant with the Closure Criteria.
- Confirmation soil samples will be collected at a sampling frequency representing no more than 200 square feet.
- An estimated 985 cubic yards of impacted soil will be excavated and disposed of at a New Mexico approved disposal facility.
- The excavation will be backfilled with locally procured material and recontoured to match pre-existing conditions.

XTO Energy, Inc
Remediation Work Plan
Western CDP



If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC

Handwritten signature of Tracy Hillard in black ink.

Tracy Hillard
Project Engineer

Handwritten signature of Tacoma Morrissey in black ink.

Tacoma Morrissey
Associate Principal

cc: Robert Woodal, XTO
Richard Kotzur, XTO
Bureau of Land Management




Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Proposed Excavation Extent
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Karst Survey Results
Appendix D	Lithologic Soil Sampling Logs
Appendix E	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix F	Spill Volume Calculation







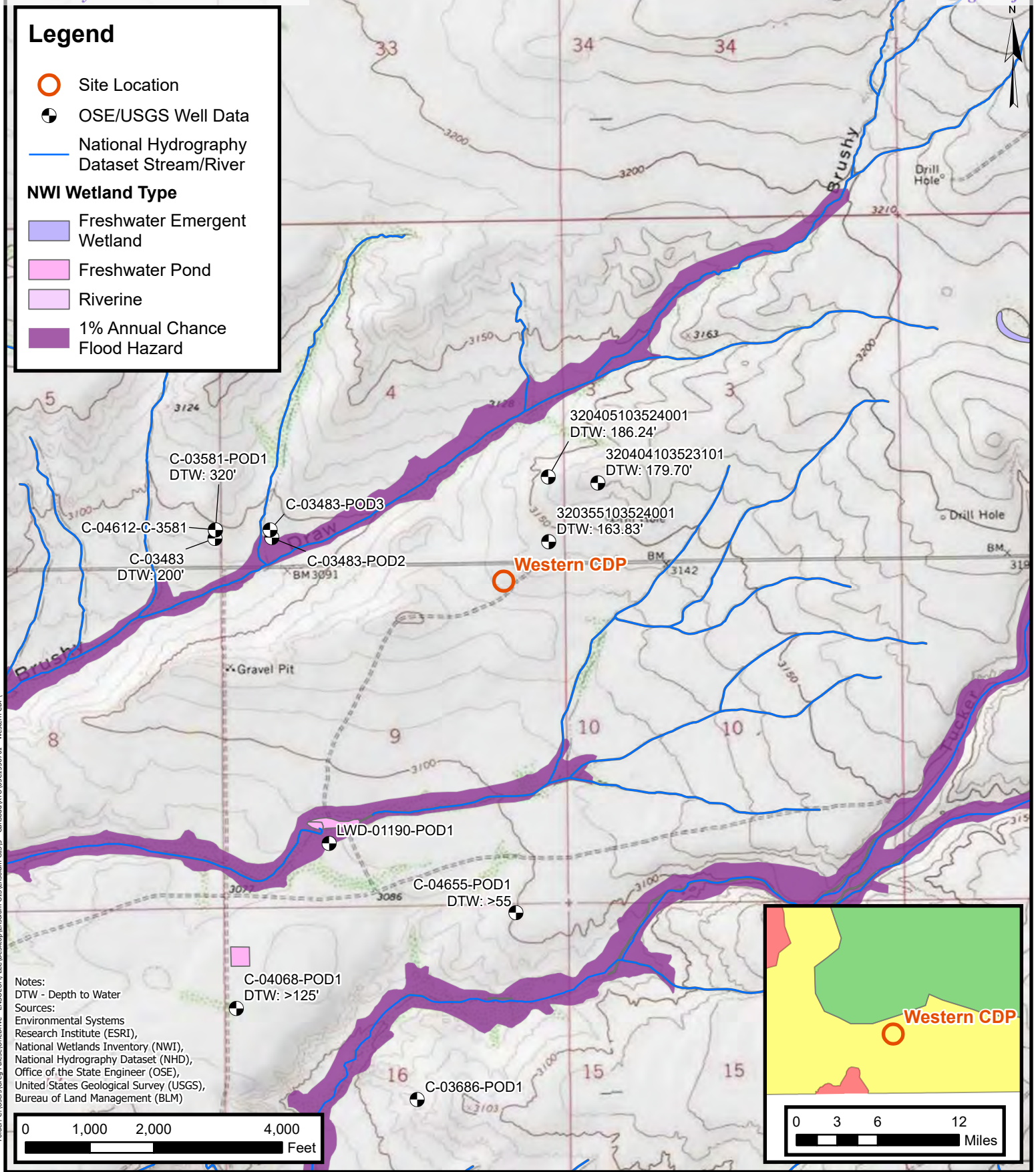
FIGURES

Legend

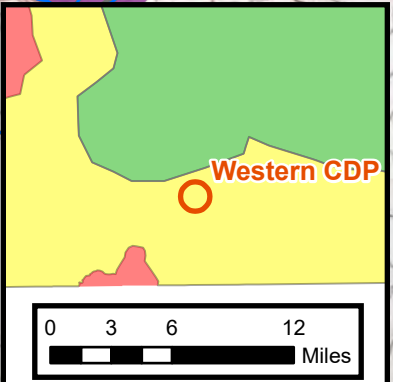
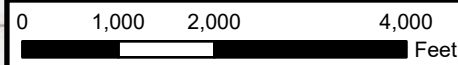
-  Site Location
-  OSE/USGS Well Data
-  National Hydrography Dataset Stream/River

NWI Wetland Type

-  Freshwater Emergent Wetland
-  Freshwater Pond
-  Riverine
-  1% Annual Chance Flood Hazard



Notes:
DTW - Depth to Water
Sources:
Environmental Systems
Research Institute (ESRI),
National Wetlands Inventory (NWI),
National Hydrography Dataset (NHD),
Office of the State Engineer (OSE),
United States Geological Survey (USGS),
Bureau of Land Management (BLM)



Site Receptor Map

XTO Energy, Inc
Western CDP

Incident Number: nAPP2519241839
Unit A, Section 09, T 26S, R 30E
Eddy County, New Mexico

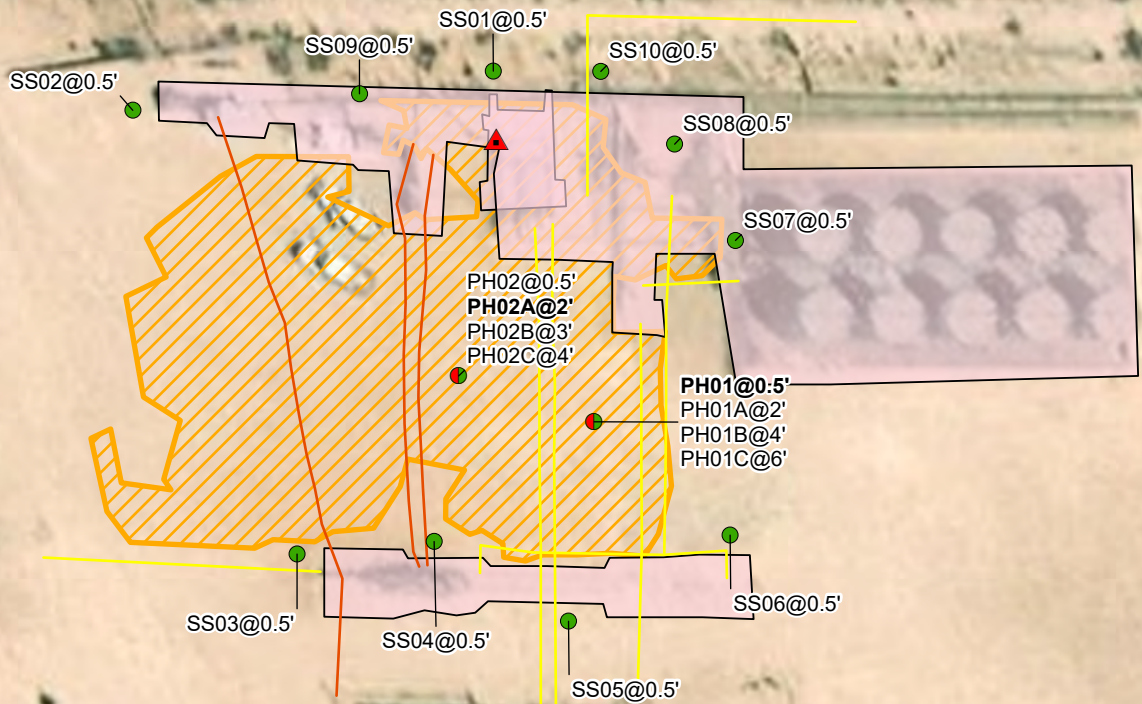
FIGURE

1

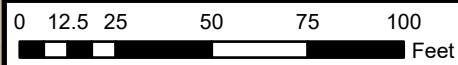


Legend

- Delineation Soil Sample in Compliance with Closure Criteria
- Delineation Soil Sample with Concentrations Previously Exceeding Closure Criteria
- ▲ Point of Release (POR)
- Oil and Gas Utility Line
- Electric Line
- Infrastructure
- Release Extent



Notes:
 Sample ID @ Depth Below Ground/Surface.
 Samples in bold indicate sample exceeded applicable Closure Criteria.



Sources: Environmental Systems Research Institute (ESRI)

Delineation Soil Sample Locations

XTO Energy, Inc.
Western CDP

Incident Number: nAPP2519241839
Unit A, Section 09, T 26S, R 30E
Eddy County, New Mexico

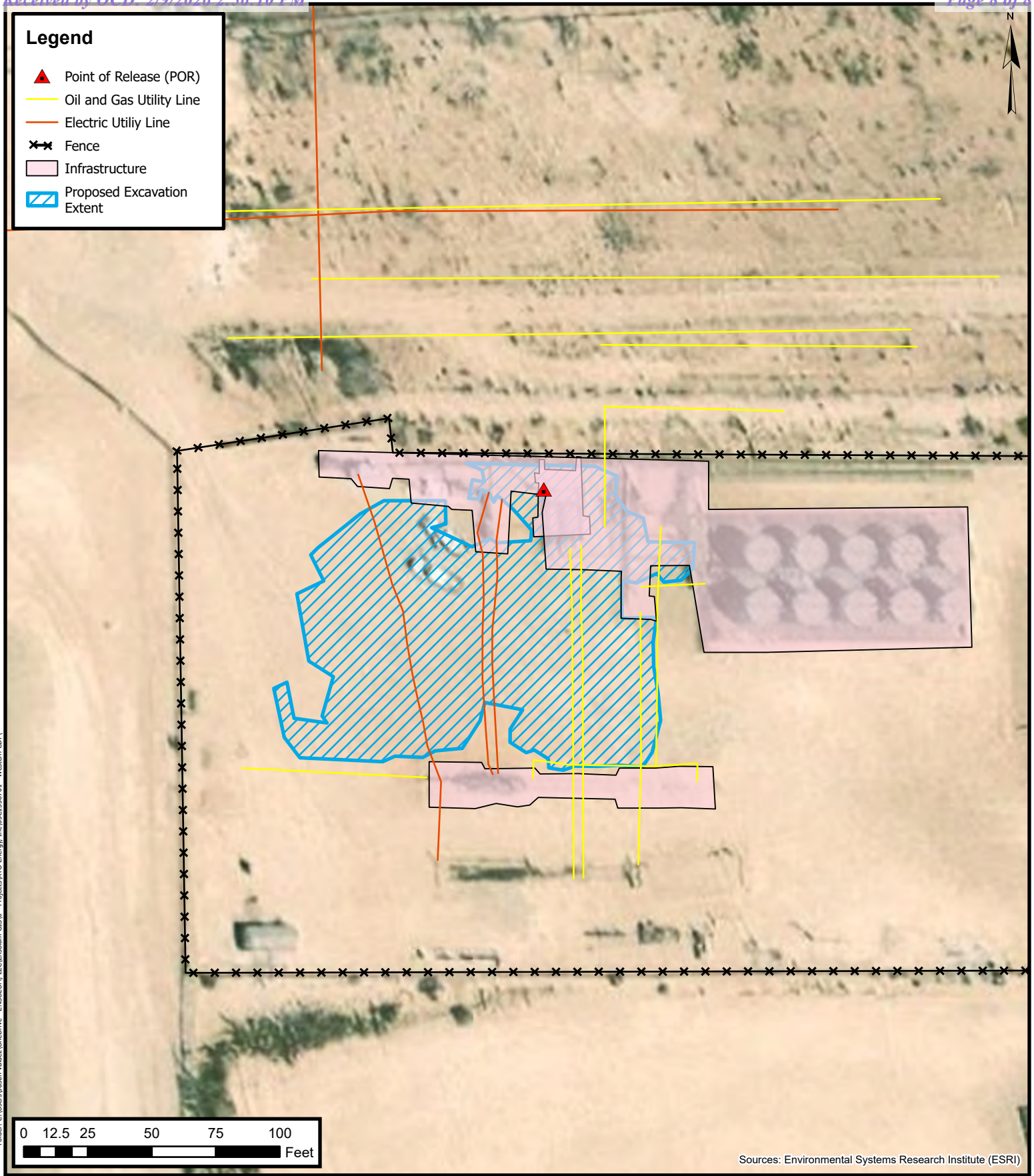
FIGURE

2

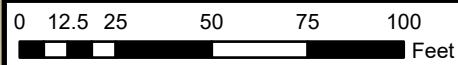


Legend

- ▲ Point of Release (POR)
- Oil and Gas Utility Line
- Electric Utility Line
- Fence
- Infrastructure
- Proposed Excavation Extent



Folder: C:\Users\Justin Velazquez\OneDrive - ENSOLUM, LLC\Ensolium GIS\0 - Projects\XTO Energy, Inc\031589701 - Western CDP



Sources: Environmental Systems Research Institute (ESRI)



Proposed Excavation Extent

XTO Energy, Inc.
 Western CDP
 Incident Number: nAPP2519241839
 Unit A, Section 09, T 26S, R 30E
 Eddy County, New Mexico

FIGURE
3



TABLES



**TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Western CDP
XTO Energy, Inc
Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Assessment Soil Samples										
PH01	07/22/2025	0.5	5.85	329	5,490	12,100	925	17,590	18,515	16.0
PH01A	07/22/2025	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
PH01B	07/22/2025	4	<0.050	<0.300	<10.0	131	<10.0	131	131	48.0
PH01C	07/22/2025	6	<0.050	<0.300	<10.0	17.4	<10.0	17.4	17.4	256
PH02	07/22/2025	0.5	<0.050	<0.300	11.9	189	<10.0	201	201	32.0
PH02A	07/22/2025	2	<0.050	6.81	196	1,060	95.7	1,256	1,352	32.0
PH02B	07/22/2025	3	<0.050	<0.300	<10.0	53.0	<10.0	53.0	53.0	32.0
PH02C	07/22/2025	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS01	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS02	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS03	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS04	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
SS05	10/03/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS06	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS07	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS08	10/02/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS09	10/03/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS10	10/03/2025	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample removed during excavation activities



APPENDIX A

Referenced Well Records



USGS Home
 Contact USGS
 Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater Geographic Area: United States

Click to hide News Bulletins

- Explore the NEW [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.

Groundwater levels for the Nation

i Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

Agency code = usgs
 site_no list =

- 320355103524001

Minimum number of levels = 1
[Save file of selected sites](#) to local disk for future upload

USGS 320355103524001 26S.30E.08.11421

Eddy County, New Mexico
 Latitude 32°03'55", Longitude 103°52'40" NAD27
 Land-surface elevation 3,147 feet above NAVD88
 The depth of the well is 200 feet below land surface.
 This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
 This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1948-12-15			D	62610	2973.44	NGVD29	P		Z	
1948-12-15			D	62611	2975.04	NAVD88	P		Z	
1948-12-15			D	72019	171.96		P		Z	
1959-02-18			D	62610	2981.57	NGVD29	1		Z	
1959-02-18			D	62611	2983.17	NAVD88	1		Z	
1959-02-18			D	72019	163.83		1		Z	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static

Section	Code	Description
Status	P	Pumping
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

[Questions or Comments](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[Accessibility](#) [FOIA](#) [Privacy](#) [Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2025-07-11 17:56:09 EDT

0.4 0.33 nadww01



APPENDIX B

Photographic Log



Photographic Log

XTO Energy, Inc
Western CDP
nAPP2519241839

<p><u>Photograph</u> 1</p>	<p><u>Date</u> 7/11/2025</p>	<p>☉ 203°S (T) • 32.063768, -103.880755 ±3m ▲ 929m</p>  <p>Stained area</p> <p>Western CTB 11 Jul 2025, 10:49:34 AM</p>
<p><u>Description</u> Initial release staining on pad</p>		
<p><u>View</u> South</p>		
<p><u>Photograph</u> 2</p>	<p><u>Date</u> 7/11/2025</p>	<p>☉ 271°W (T) • 32.063725, -103.880272 ±3m ▲ 930m</p>  <p>Stained area</p> <p>Western CTB 11 Jul 2025, 10:51:37 AM</p>
<p><u>Description</u> Initial release staining on pad</p>		
<p><u>View</u> West</p>		



Photographic Log

XTO Energy, Inc
Western CDP
nAPP2519241839

<p><u>Photograph</u> 3</p>	<p><u>Date</u> 7/22/2025</p>	
<p><u>Description</u> Delineation activities; near PH02</p>		
<p><u>View</u> West</p>		
<p><u>Photograph</u> 4</p>	<p><u>Date</u> 10/2/2025</p>	
<p><u>Description</u> Delineation activities; near SS08</p>		
<p><u>View</u> South</p>		



Photographic Log

XTO Energy, Inc
Western CDP
nAPP2519241839

<p><u>Photograph</u> 5</p>	<p><u>Date</u> 10/3/2025</p>	
<p><u>Description</u> Delineation activities; near SS01</p>		
<p><u>View</u> West</p>		
<p><u>Photograph</u> 6</p>	<p><u>Date</u> 1/30/2026</p>	
<p><u>Description</u> Pedestrian survey; USGS 320355103524001</p>		
<p><u>View</u> East</p>		



Photographic Log

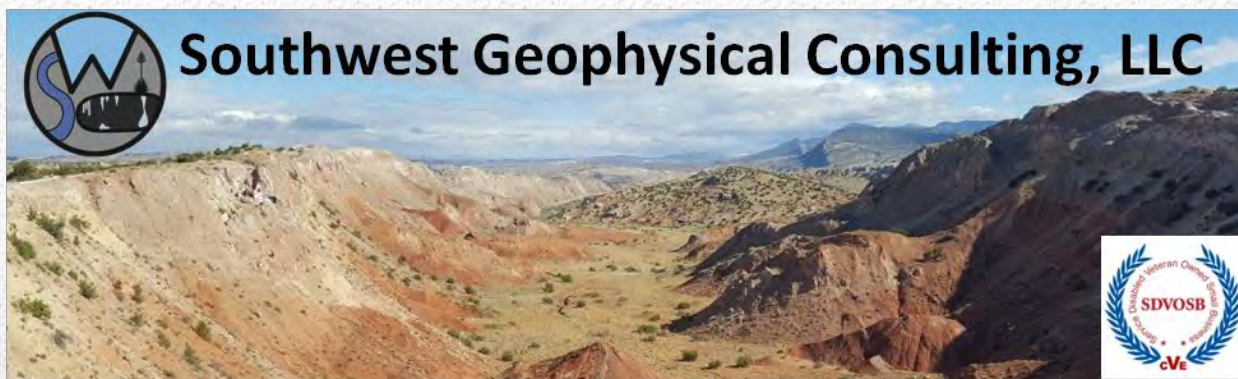
XTO Energy, Inc
Western CDP
nAPP2519241839

<p><u>Photograph</u> 7</p>	<p><u>Date</u> 1/30/2026</p>	<p>135°SE (T) ● 32.065395°N, 103.878290°W ±9ft ▲ 3147ft</p>
<p><u>Description</u> Pedestrian survey; USGS 32035510352400</p>		
<p><u>View</u> Southeast</p>		<p>Ensolium, LLC Western CDP 30 Jan 2026, 12:45:37 MST</p>
<p><u>Photograph</u> 8</p>	<p><u>Date</u> 1/30/2026</p>	<p>225°SW (T) ● 32.065393°N, 103.878292°W ±13ft ▲ 3150ft</p>
<p><u>Description</u> Pedestrian survey; USGS 32035510352400</p>		
<p><u>View</u> Southwest</p>		<p>Ensolium, LLC Western CDP 30 Jan 2026, 12:45:45 MST</p>



Appendix C

Karst Survey Results



**Environmental Karst Study Report
XTO Western CDP
Eddy County, New Mexico**

**Prepared For:
Ensolum, LLC
3122 National Parks Highway
Carlsbad, NM 88220**

Within 200 feet of the spill delineation boundary:

Negative Positive for surface karst

Stable Unstable Ground

Karst Monitor Recommended

September 26, 2025

ENS-020-20250813

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MMXXV

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1.0 INTRODUCTION

This report was commissioned by Ensolum, LLC (hereinafter referred to as "the client"), on August 13, 2025, for the purpose of conducting an environmental karst study within an area encompassing the XTO Western CDP release site (hereinafter termed "XWST") centered at N 32.063670° W 103.879660°.

1.1 Goals of this Study

The goals of this study are to conduct a surface karst inventory and provide the client with the location and description of any surface karst features located within 200 feet (61 meters) of the spill delineation boundary (as defined by 19.15.29.12 NMAC^[1]), and to determine whether stable ground exists (as defined by 19.15.2 NMAC Definitions^[2]) within 200 feet of the spill boundary of the XTO Western CDP release as provided by the client via e-mail (XTO Western CDP.kmz) on August 13, 2025, using electrical resistivity imaging^[3].

1.2 Summary of Findings

- **No surface karst features exist within the 200-foot (61-meter) perimeter of the spill delineation boundary.**
- **No anomalies consistent with subsurface air- or water-filled voids were found within the XWST geophysical survey area, indicating the zone beneath the geophysical survey is not subject to collapse.**
- **Flat-lying stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted, indicating stable ground.**

1.3 Affected Environment

The XWST project is located in evaporite karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Evaporite karst terrain may contain sinkholes, sinking streams, caves, and springs. Sinkholes leading to underground drainages and voids are common. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region. Karst may develop by hypogene processes involving dissolution by upwelling fluids from depth independent of recharge from the overlying or immediately adjacent surface. Hypogene karst systems may not be connected to the surface and can remain undiscovered unless encountered during drilling or excavation.

Karst features are delicate resources that are often of geological, hydrological, biological, and archeological importance, and should be protected. The four primary concerns that need to be considered in these types of terrain are environmental issues, worker safety, equipment damage, and infrastructure integrity.

The Bureau of Land Management (BLM) categorizes all areas within the Carlsbad Field Office (CFO) zone of responsibility as having either low, medium, high, or critical cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers^[4]. These designations are also recognized by the New Mexico State Land Office (NMSLO). This project occurs within a **MEDIUM** karst occurrence zone (MKOZ)^[5] (**Figure 1**).

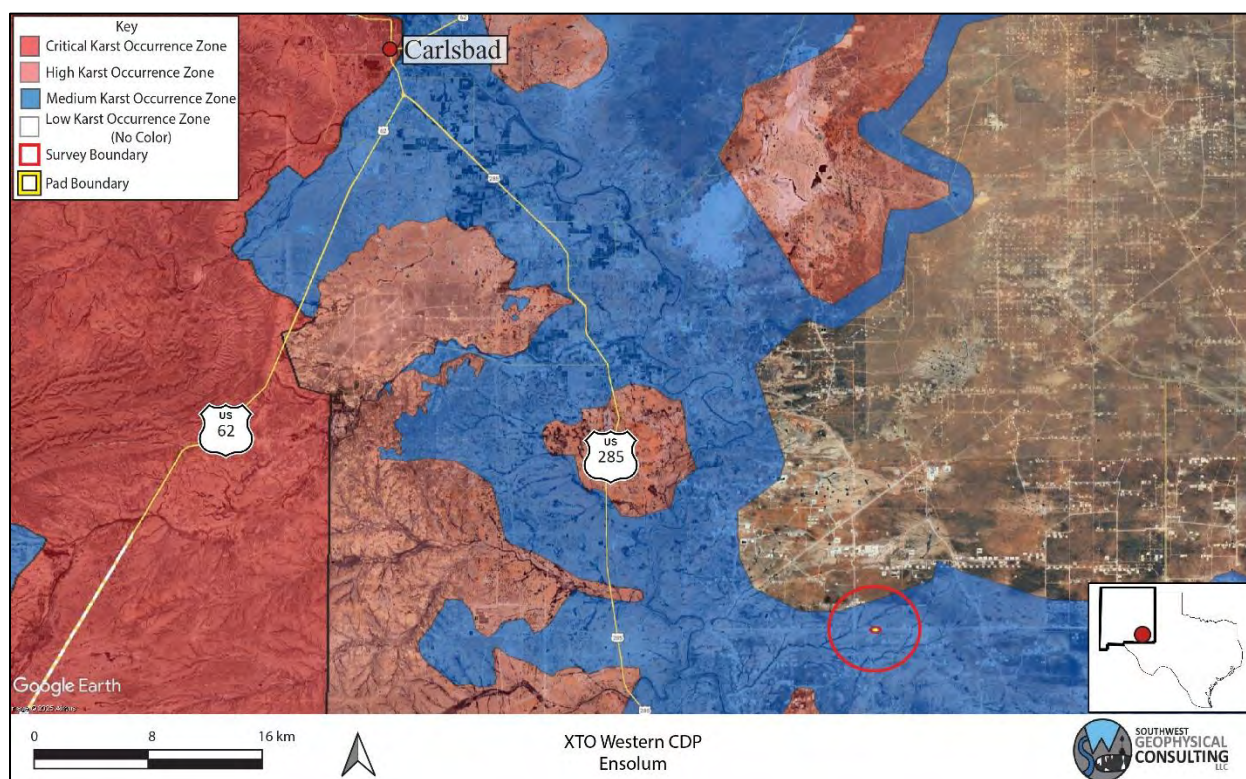


Figure 1: Karst occurrence zone overview. Background image credit: Google Earth. Image date: December 31, 2023. Image datum: WGS-84.

A medium karst occurrence zone is defined as an area in known soluble rock types that may have a shallow insoluble overburden. These areas may contain isolated karst features such as caves and sinkholes. Groundwater recharge may not be wholly dependent on karst features, but the karst features still provide the most rapid aquifer recharge in response to surface runoff^[4].

Due to the rapidity with which evaporite karst develops, each location within a BLM-CFO designated karst occurrence zone must be assessed on an individual basis to determine the existence of surface karst features and the possibility of sub-surface karst development each time a release occurs.

1.4 Limitations of Report

This report should be read in full. No responsibility is accepted for the use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

This report has been prepared for the use of Ensolum, LLC, in accordance with generally accepted consulting practices. Every effort has been made to ensure the information in this report is accurate as of the time of its writing. This report has not been prepared for use by parties other than the client, their contracting party, and their respective consulting advisors. It may not contain sufficient information for the purposes of other parties or for other uses.

This report was prepared upon completion of the associated fieldwork using a standard template prepared by Southwest Geophysical Consulting and is based on information collected prior to fieldwork, conditions encountered on-site, and data collected during the fieldwork and reviewed at the time of preparation. Southwest Geophysical Consulting disclaims responsibility for any changes that might have occurred at the site after this time. The interpreted results, locations, and depths noted in this report (if applicable) should be taken as an interpretation only and no decision should be based solely on this information. Physical verification of aerial imagery analysis results in the field should be conducted prior to using this information for remediation planning. Physical verification of geophysical results using geotechnical methods should be conducted.

To the best of our knowledge, the information contained in this report is accurate at the date of issue. Due to the nature of karst terrain, the information in this report shall not be used beyond two years past the date of the field work provided in section **2.3 Description of Survey**. Large weather events can shorten this time period as areas subject to karst development can rapidly form new features subsequent to these events.

2.0 LOCATION AND DESCRIPTION OF STUDY AREA

2.1 Description of Site

The site is located 51.2 kilometers (31.8 miles) southeast of Carlsbad, New Mexico, south of and adjacent to Pipeline Road in an area known as Red Bluffs. The pad boundary is located within the NE ¼ section of section 9, NM T26S R30E^[6] (**Figure 1** and **Figure 2**). The region has rolling terrain with karstification occurring in the gypsite soils and underlying gypsum and dolomite bedrock^[7] (see section **2.2 Local Geology Summary** for further information). The climate in this area of southeast New Mexico is semi-arid with an average annual precipitation of approximately 13 inches, of which about two-thirds falls as rain during summer thunderstorms from June to October. Summers are hot and sunny while winters are generally mild, with an average maximum temperature of 96°F in July and an average minimum temperature of 28°F in January^[8]. This area is within the Chihuahuan Desert Thornscrub as defined by the Southwestern Regional ReGAP Vegetation map^[9] and the vegetation consists mostly of areas of blue grama, nine-awned pappus grass, burro grass and low scrub including yucca. The survey boundary is located within an MKOZ^[5] (**Figure 1**) and within BLM-CFO managed land^[10] (**Figure 2**).

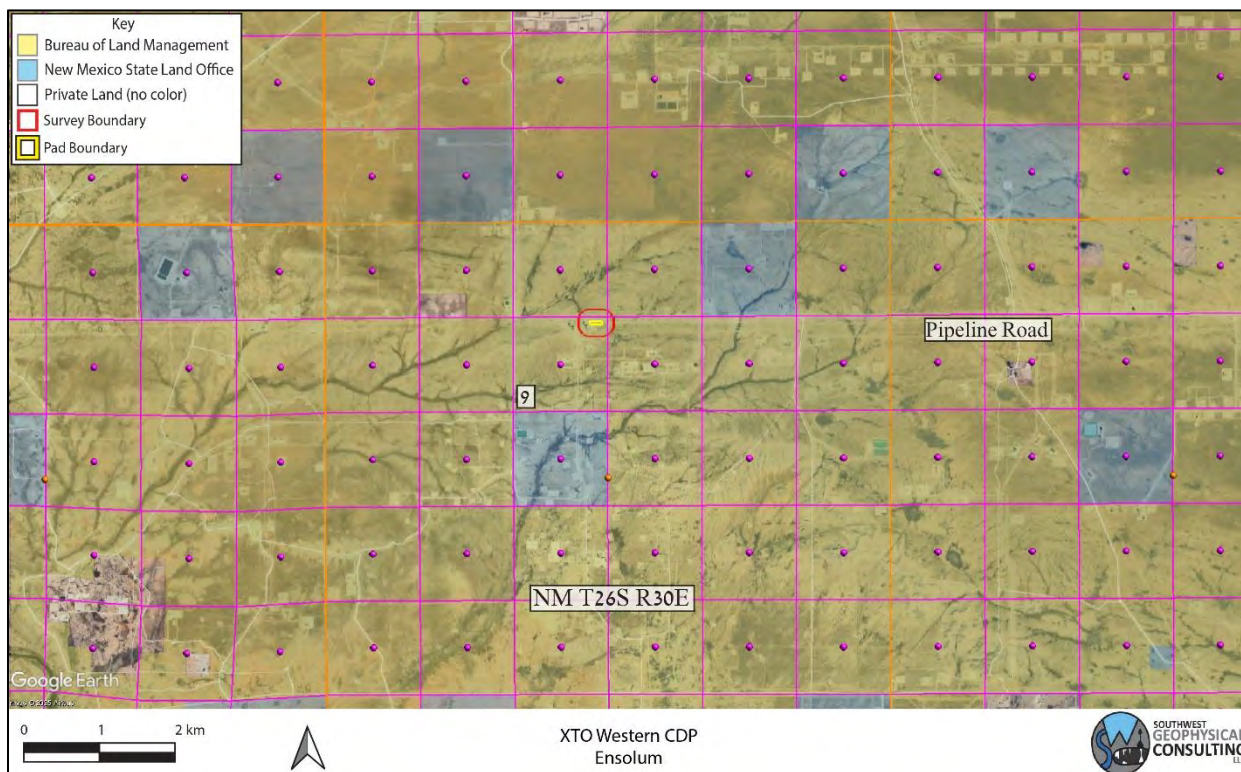


Figure 2: Land ownership and PLSS overview. Background image credit: Google Earth. Image date: December 31, 2023. Image datum: WGS-84.

2.2 Local Geology Summary

The site for the XWST survey is located at an elevation of 956 meters (3,136 feet), \pm 2 meters (6.6 feet), and is located within a region entirely underlain by the Permian Dewey Lake (Pdl) and Rustler (Pru) Formations. The area is mantled by thin gypsiferous soils (gypsite), Quaternary alluvium (Qal) and eolian sands (Qe)^[11] up to 5 meters in depth (**Figure 3**).

The Dewey Lake Formation is composed of calcite-cemented, hematite-stained quartz sand grains^[12] and occasional gypsum lenses and can, in favorable conditions, form cavernous porosity within 30 meters of the top of the Rustler Formation^[13]. The Dewey Lake Formation is also known to be highly fractured near areas of heavy halite dissolution such as Nash Draw (approximately 35 kilometers northwest), and these fractures can act as hydrologic conduits.

The Rustler Formation is an evaporite facies and is composed mainly of thin siltstones and sandstones interbedded with claystones, dolomite and gypsum^[12], and contains both karst-forming strata (the Forty-niner and Tamarisk members) and two shallow aquifers (the Magenta and Culebra Dolomite members). The Forty-niner and Tamarisk members are known to have highly developed karst features including large voids and solution-enlarged fractures^[14].

The survey area is covered by the easily accessible Geologic Map of New Mexico (2003) at 1:500,000 scale^[15] and the Digital Geologic Map of New Mexico in ARC/INFO Format^[11].

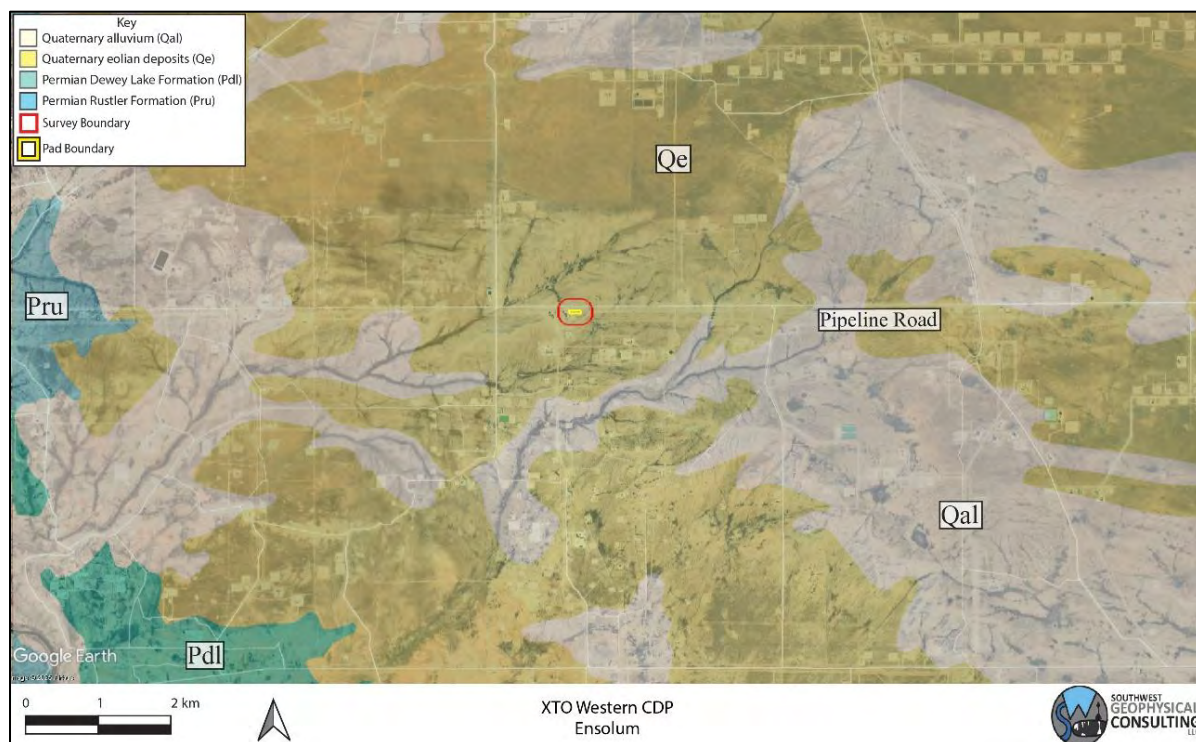


Figure 3: Geology overview. Geology map credit: The Digital Geologic Map of New Mexico in ARC/INFO Format. Background image credit: Google Earth. Image date: December 31, 2023. Image datum: WGS-84.

2.3 Description of Survey

2.3.1 Surface Karst Survey

Southwest Geophysical Consulting, in partnership with SWCA Environmental Consultants, provides surface karst surveys using small, uncrewed aerial systems (sUAS) that are flown by qualified, FAA licensed drone pilots and that meet the stringent Bureau of Land Management – Carlsbad Field Office requirements for both pedestrian and aerial karst surveys.

The surface karst survey includes a desk study prior to the flight which allows us to provide client feedback in the event of any previously known karst features in the area. The desk study is performed out to 305 meters (1,000 feet) from the spill delineation boundary per New Mexico Oil Conservation Division guidance^[1] (**Figure 4**). The study was performed using satellite and aerial imagery from Google Earth Pro dated December 31, 2023 (please note features less than one meter in diameter are generally not visible using this method); the Southwest Geophysical Cave and Karst Database dated August 10, 2025^[16]; the Ross Ranch, NM, 1:24,000 quad, 1968, USGS topographic map; and the latest lidar imagery from CalTopo.com. Please note that we use older topographic maps because newer maps have had caves removed from them. These searches and queries returned no results within the survey boundary.

Surface karst surveys are conducted by sUAS at low elevation within 200 meters of the spill delineation boundary^[4] (**Figure 4**) following a preplanned raster pattern flightpath designed for the purpose of generating at least 75% imagery overlap. The collected high-resolution, georeferenced imagery is stitched together to develop orthomosaic imagery which is further developed into a digital elevation model (DEM); the DEM is then processed into a local relief model (LRM) (**Figure 6**). This LRM is color coded to enhance differences in elevation of as little as five centimeters. The orthoimagery, DEM, and LRM are uploaded to a server where they are analyzed by an experienced karst geologist. Finally, the data is reviewed by a senior karst geologist for quality assurance and downloaded into a table for inclusion in a written report^[17].

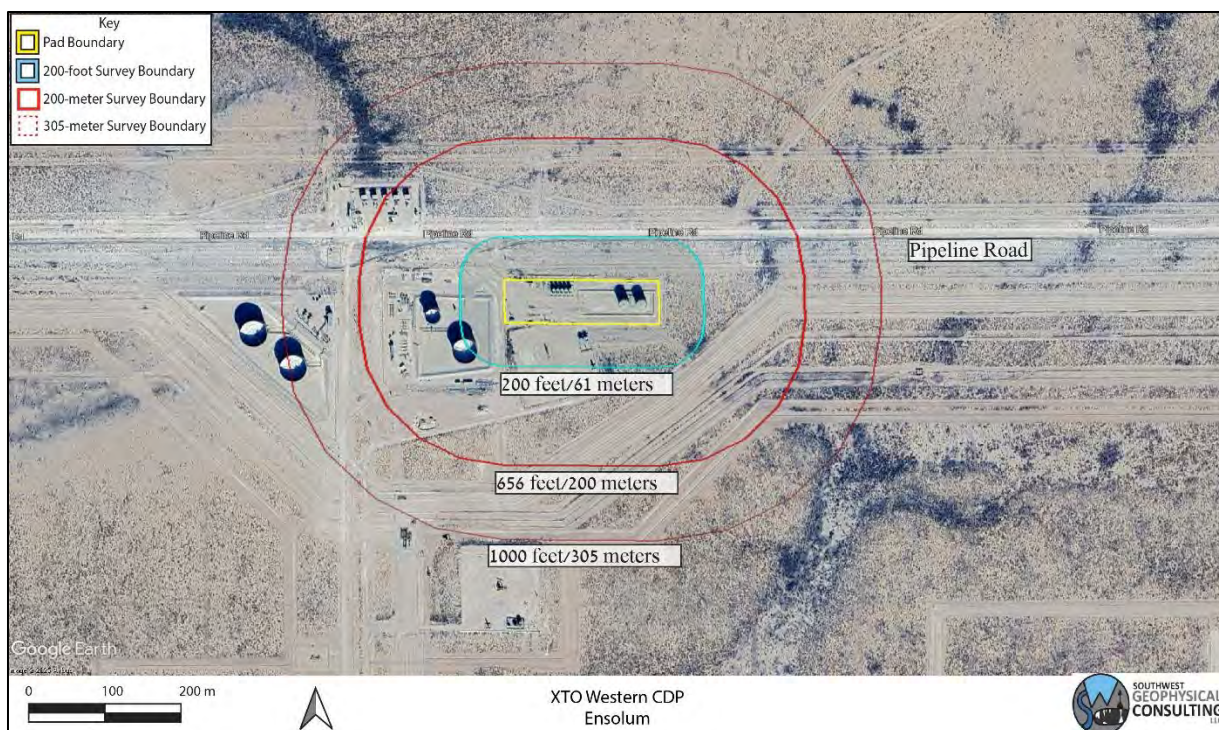


Figure 4: Surface karst survey overview. Background image credit: Google Earth. Image date: December 31, 2023. Datum: WGS-84.

The resolution of the orthoimagery is clear enough that features as small as 10 centimeters can be positively identified in most circumstances. Occasionally there are ambiguous features identified during an aerial survey that will need to be checked in the field if they are impacted by the proposed remediation efforts. Specifically, it is difficult to tell the difference between solution tubes, abandoned uncased well bores, and some burrows in drone imagery. If an ambiguous feature is located during imagery analysis, it is marked with a yellow dot in **Figure 6**. If a feature of any likelihood is subsequently verified in the field prior to publication of the report, the dot will be changed to a red triangle if confirmed as a karst feature or deleted if not.

The imagery for this study was collected via sUAS by Pat Lagodney of SWCA on August 27, 2025. Surface karst features may have developed after this date and will not be noted in this report. Imagery analysis was completed by Dave Decker of Southwest Geophysical Consulting on September 4, 2025.

2.3.2 Geophysical Survey

For this survey, a Guideline Geo Terrameter LS 2 and a 42-electrode array of 40-centimeter-long electrodes were used to image the subsurface. This survey consisted of one resistivity line of 42 electrodes at 5-meter spacing in a dipole-dipole configuration laid out west to east, resulting in a 205-meter-long array (**Figure 5, Table 1**). A preconfigured protocol file was used to run the data collection (DipoleDipole3x14). This electrode configuration provided a depth of investigation of 41 meters (135 feet) and a resolution of 2.5 to 3.0 meters (8.2 to 9.8 feet) within the first 5 to 8 meters (16 to 26 feet) from the surface. A Leica GS18 GPS was used to record electrode locations and elevations.



Figure 5: Geophysical survey overview. One survey line was conducted with 42 electrodes (yellow dots denoted with blue numbers). Background image credit: Google Earth. Image date: December 31, 2023. Datum: WGS-84.

Table 1 provides basic line data. Detailed information for each line including electrode number, location in latitude/longitude (decimal degree format), and elevation in meters can be found in the accompanying data files.

Table 1: Survey Line Data Table. The .kmz file contains all the points for the survey line listed in the file name. These data are available in the accompanying files XWST_ERI_Points.xlsx and ENS-020-20250813_XWST_Data_Files.kmz.

File Name:	Completed By:	Date:
XWST01.kmz	Garrett Jorgensen Olague – Senior Field Geologist Britt Bommer – Field Geologist Aaron Beirl – Field Geologist Ryan Palmer – GIS Specialist	9/8/2025

EarthImager™ 2D software was used to download and process the data and to provide the model used to make our interpretations. The design of the survey and the orientation of each of the lines provides the information necessary to make the determination of “stable” or “unstable” ground at this site.

A typical starting model was used for the data processing due to the two-layer model of the geology in the area; specifically, generally high-resistivity gypsum and dolomite at the surface and low-resistivity saturated gypsum and dolomite bedrock at depth. The starting model used was “average apparent resistivity” and a default inversion setting of “surface,” with a minimum apparent resistivity set to 0.1 Ohm-meters (Ohm-m or Ω-m) and a max apparent resistivity set to 100,000 Ω-m (**Table 2**).

Table 2: Software Information and Settings

Software Name:	EarthImager™ 2D
Version:	2.4.4.649
Starting Model:	Average Apparent Resistivity
Default Inversion Settings:	Surface
Changes to Default Inversion Settings:	Max Apparent Resistivity = 100 kΩ-m Min Apparent Resistivity = 0.1 Ω-m

Note: Raw data files (.dat files for EarthImager™ 2D) and processed data (.trn files, terrain files for surface correction in EarthImager™ 2D and .out files, the processed .dat files) are available upon request.

All field work, including setup, stow, and travel, was completed by Garrett Jorgensen Olague, Britt Bommer, Aaron Beirl, and Ryan Palmer on September 8, 2025.

3.0 RESULTS

3.1 Surface Karst Survey

The desk study and surface karst survey showed no surface karst features within 305 meters (1,000 feet)^[1] of the spill delineation boundary (Figure 6).

No springs exist within the 305-meter (1,000-foot)^[1] survey boundary (Figure 6).

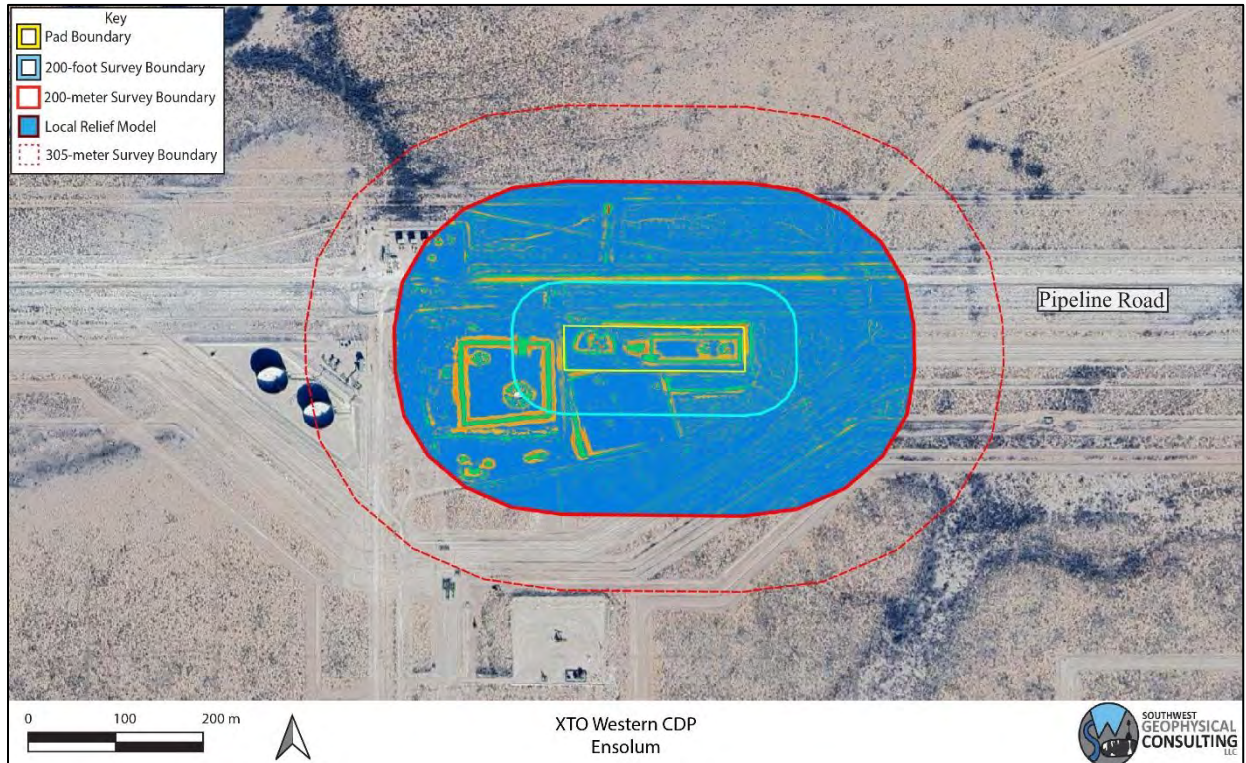


Figure 6: Surface karst survey results. Background image credit: Google Earth. Image date: December 31, 2023. Image datum: WGS-84.

3.2 Geophysical Survey

Electrical resistivity tomography forms images of the subsurface by causing a current to flow through the rock and soil and then measuring the resistance of these materials as the current flows through them. This measurement is taken many times and the resulting data, once processed, is used to produce a model of the subsurface (**Figure 7**). This model is produced using "non-unique" solutions, which means that there are many models and interpretations which will satisfy the data. Using experience and knowledge of the local geology, a high-confidence model can be established and used to develop an accurate understanding of what lies below the surface. This survey was conducted with the express purpose of locating subsurface voids and does not purport to find paleokarst (old, non-active karst features that have been filled in with sand and sediment) or nascent karst features below the resolution limit of the survey.

The results of this study indicate a well-layered geologic system with resistivities between 10 and 1,358 Ohm-m. One low-resistivity anomaly with a value of 1.9 Ohm-m is present underneath electrode 14 at a depth of 10 – 20 meters (**Figure 7**). Please keep in mind when viewing the 2D inverted resistivity sections that color maps can be widely different for each view. Always check the color map located on the right side of the image when viewing the 2D images to ensure you understand the range of resistivities presented. Distances along the top and depths along the left side are in meters. The color map along the right side is in Ohm-m. Due to the nature of the survey, shallower zones have higher resolution between electrodes than deeper zones; therefore, small features at depth will not be visible.

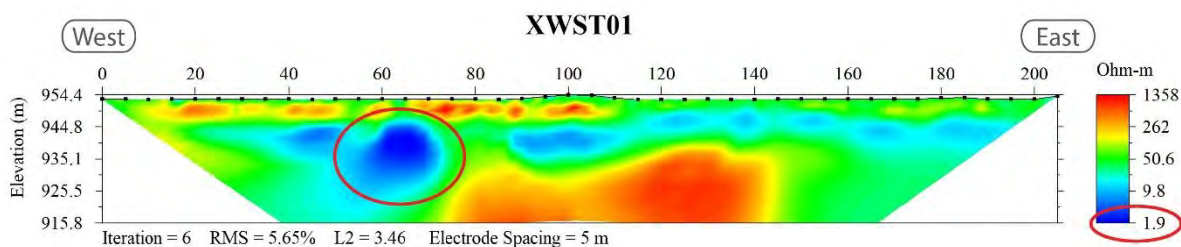


Figure 7: 2D inverted resistivity sections. Reds and oranges indicate higher resistivity values. Yellows and greens are medium-resistivity values. Blues are low-resistivity values. Red ellipse highlights low-resistivity anomaly. Please note that the color scale is relative.

4.0 DISCUSSION

One low-resistivity anomaly with a value of 1.9 Ohm-m is found within the XWST geophysical survey area. Due to the water table being at a depth that is greater than that of the depth of investigation of this survey, it is unlikely that the anomaly represents a fluid-filled void. Instead, it is most likely either a reflection of a nearby sump and riser or represents seepage from the spill into the subsurface (**Figure 8**).

No surface karst features and no anomalies consistent with air-filled subsurface voids are found within the XWST survey area. However, small solutionally enlarged voids or fractures at or near the resolution limit of the survey (2.5 – 3.0 meters) may be present. Slightly higher-than-average resistivity areas less than 10 meters beneath the surface are interpreted as sand, caliche, or sandstone of the Dewey Lake Formation, or dry caliche soils and gypsum or dolomite bedrock of the Rustler Formation. Due to their much lower resistivity values when compared with significant subsurface voids, these features should not be a concern during remediation efforts^[18] (**Figure 7** and **Figure 8**).

Low-resistivity areas between 1.9 – 15 Ohm-m may either represent fluid from the brine release, surface-to-subsurface hydrologic pathways, or a layer of either clays and halite lenses or moist or saturated layers within the Dewey Lake or Rustler Formations (**Figure 7**).

Please remember that these are interpretations made from knowledge of the local subsurface materials and experience. **They remain interpretations until verified by geotechnical methods.** Employing a BLM-CFO approved karst monitor on site during any drilling and/or remediation activities that require excavation below four feet in depth should be considered.

Fracture sets within the subsurface can act as hydrologic pathways to the water table. Rapid dissolution of gypsum can occur along these pathways creating solution-enlarged fractures, and in some cases, voids within months to years. For this reason, this survey is valid only for this remediation event.

Within karst terrains like the project site, small air- or sediment-filled voids and/or brecciated zones and solutionally enlarged fractures that are below the resolution limit of the survey (2.5 – 3.0 meters) may exist; these may be encountered during excavation, and if so, should be evaluated by a karst specialist prior to continued work.

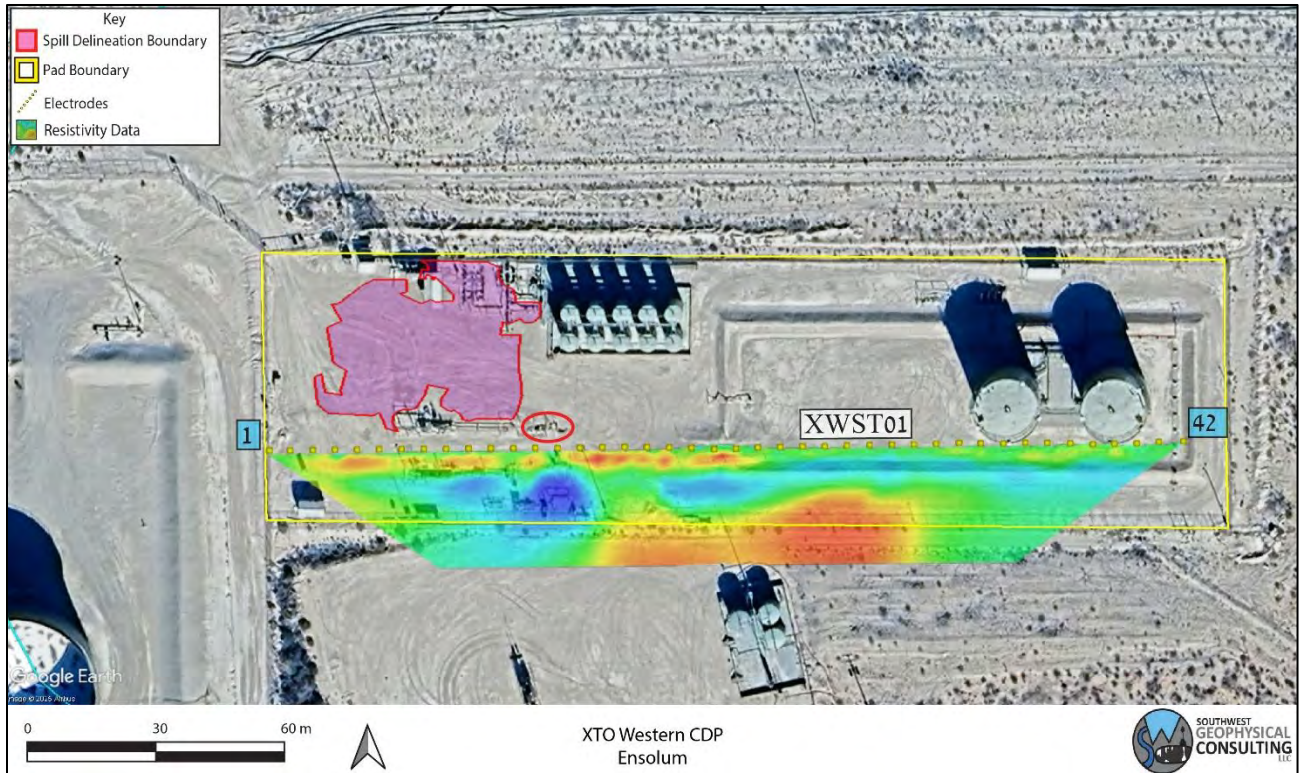


Figure 8: Data overlay. Colored trapezoids are 2D inverted resistivity lines. Red polygon highlights the sump and riser near the low-resistivity anomaly. Background image credit: Google Earth. Image date: December 31, 2023. Datum: WGS-84.

5.0 SUMMARY

- **The XWST survey contains no surface karst features within 200 feet (61 meters) of the spill delineation boundary.**
- **No shallow anomalies interpreted as large voids or related karst features that would present a danger to equipment operators are located within the survey area.**
- Intercepting a void during remediation is unlikely, but still possible. Small voids or solutionally enlarged fractures below the resolution limit of the survey may be encountered.
- **Well-layered stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted, indicating stable ground.**
- When conducting any remediation activities in this area, employing a BLM-CFO approved karst monitor on site should be considered.

6.0 DISCLOSURE STATEMENT

Karst occurrence zones are prone to rapid karst formation and warrant careful planning and engineering to mitigate karst-forming processes that could be accelerated by removal of surface cover or the vibrations associated with heavy equipment used in the remediation process.

Mitigation measures for any karst features revealed during excavation shall be approved by the Bureau of Land Management – Carlsbad Field Office and follow the Natural Resources Conservation Service Conservation Practice Standard for Karst Sinkhole Treatment, Code 527, or the Bureau of Land Management Cave and Karst Management Handbook, H-8380-1.

Vigilance during remediation activities is paramount. If voids are encountered during excavation, contact the Bureau of Land Management Karst Division at (575) 234-5972, the New Mexico State Land Office Surface Resources Division at (505) 827-5768, or a BLM-CFO approved karst contractor and request an on-site investigation from a karst expert if one is not already on site. A karst consultant can generally be available in Eddy County within five hours.

Approved karst monitors should have karst feature identification training, at least two years of supervised experience identifying karst features, wilderness first aid training, SRT training, confined space training, gas monitor training, and a minimum of SPAR cave rescue training through NCRC. They should have with them the proper gear and be prepared both physically and mentally to enter a collapse feature within minutes to perform a rescue if needed. Monitoring services with qualified karst monitors, as well as cave surveys and geophysical surveys, are available from Southwest Geophysical Consulting.

Under no circumstances should an untrained, inexperienced person enter a cave, pit, sinkhole, or collapse feature. All field employees of Southwest Geophysical Consulting have extensive caving experience and the ability to determine whether entry into a karst feature is safe or presents a hazard. In the event it is necessary to enter a karst feature, Southwest Geophysical Consulting can provide these services on request.

Cave and karst resource inventory reports, karst feature investigations, and geophysical reports (along with the associated data files) commissioned at the request of the land manager should be submitted to BLM-CFO at blm_nm_karst@blm.gov.

Cave and karst resource inventory reports for the NMSLO should be submitted to the respective project manager.

Environmental karst reports should be submitted to the appropriate project manager at the New Mexico Oil Conservation Division.

7.0 REFERENCES

- 1 Division, O. C. *Title 19, Chapter 15, Part 29* (Oil Conservation Division, 2018).
- 2 NMSLO. (ed Oil Conservation Division) (New Mexico State Land Office, Santa Fe, NM, 2018).
- 3 Decker, D. & Jorgensen, G. L. *Environmental Karst Surveys White Paper* (Southwest Geophysical Consulting, LLC, 2024).
- 4 Goodbar, J. R. Vol. BLM Management Handbook H-8380-1 (ed Carlsbad Field Office) 59 (Bureau of Land Management, Denver, CO, 2015).
- 5 Decker, D., Trautner, E. & Palmer, R. (Bureau of Land Management - Carlsbad Field Office, 2025).
- 6 Earthpoint. *Earthpoint Tools for Google Earth*, <<https://www.earthpoint.us/Townships.aspx>> (2022).
- 7 Decker, D. D., Land, L. & Luke, B. Characterization of Playa Lakes in the Gypsum Karst of Southeastern New Mexico and West Texas, USA. *Oklahoma Geological Survey Circular 113* **113** (2021).
- 8 W.R.C.C. *National Climate Data Center 1981-2010 Normal Climate Summary for Carlsbad, New Mexico (291469)*, 2010).
- 9 Whitehead, W. & Flynn, C. *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology*. (Bureau of Land Management, Carlsbad Field Office, 2017).
- 10 NMSLO. Digital overlay (KML) of the surface land ownership in New Mexico (New Mexico State Land Office, Santa Fe, NM, 2024).
- 11 Green, G. N. & Jones, G. E. *The Digital Geologic Map of New Mexico in ARC/INFO Format*, <<https://mrdata.usgs.gov/geology/state/state.php?state=NM>> (1997).
- 12 Austin, G. S. *Geology and mineral deposits of Ochoan rocks in Delaware Basin and adjacent areas*. Vol. Circular 159 (New Mexico Bureau of Mines and Mineral Resources, 1978).
- 13 Powers, D. W., Lambert, S. J., Shaffer, S.-E., Hill, L. R. & Weart, W. D. Geological Characterization Report, Waste Isolation Pilot Plant (WIPP) Site, Southeastern New Mexico. 726 (Sandia Laboratories, Albuquerque, NM, 1978).
- 14 Goodbar, J. R. & Goodbar, A. in *US Geological Survey Karst Interest Group* (National Cave and Karst Research Institute, Carlsbad, NM, 2014).
- 15 Scholle, P. A. *Geologic Map of New Mexico*. (2003).

- 16 Decker, D. D., Jorgensen, G. L. & Palmer, R. in *Southwest Geophysical Cave and Karst Database* (ed LLC Southwest Geophysical Consulting) (Albuquerque, NM, 2025).
- 17 Whitehead, W., Bandy, M. & Decker, D. Protocol for Using UAV Photography for Rapid Assessment of Karst Features in Southeast New Mexico. *Proceedings of the 2022 Cave and Karst Management Symposium* (2022).
- 18 Hill, C. A. *Geology of the Delaware Basin, Guadalupe, Apache and Glass Mountains, New Mexico and West Texas*. Vol. 96-39 (Permian Basin Section - SEPM, 1996).

8.0 GLOSSARY OF TERMS

AGI	Advanced Geosciences Inc.
BLM-CFO	Bureau of Land Management - Carlsbad Field Office
brecciated	Fractured rock caused by faulting or collapse.
caprock-collapse sinkhole	Collapse of roof-spanning rock into a cave or void.
cave	Natural opening at the surface large enough for a person to enter.
cover-collapse sinkhole	Collapse of roof-spanning soil or clay ground cover into a subsurface void.
ERI	Electrical Resistivity Imaging
GPS	Global Positioning System
grike	A solutionally enlarged, vertical, or sub-vertical joint or fracture.
(H)	High confidence modifier for a PKF. This is typically reserved for a feature that is definitely karst but has not been confirmed in the field.
HKOZ	High Karst Occurrence Zone
karst	A landscape containing solutional features such as caves, sinkholes, swallets, and springs.
(L)	Low confidence modifier for a PKF. This is typically a feature that cannot be ruled out as karst but is most likely NOT karst related. This modifier may also be used for pseudokarst features.
(M)	Medium confidence modifier for PKF. This is an ambiguous feature that can't be positively identified as karst without a field visit (e.g., burrows, abandoned unlined wells, solution tubes, pseudokarst).
MKOZ	Medium Karst Occurrence Zone
NCRC	National Cave Rescue Commission
NKF	Non-karst feature. Used for features originally identified as PKF that have been subsequently identified in the field as non-karst related. This term may also be used for pseudokarst features.
NMSLO	New Mexico State Land Office
Ohm-m	Ohm-meter, a unit of measurement for resistivity. Sometimes abbreviated Ω -m.
paleokarst	Previously formed karst features that have been filled in by erosion and/or deposition of minerals.
Pat	Permian Artesia Group
Pc	Permian Capitan Formation
Pcs	Permian Castile Formation

Pdl	Permian Dewey Lake Formation
PKF	Possible karst feature. This term is reserved for features identified in satellite or aerial imagery that have NOT been visited in the field. Further modifiers include (H) for high confidence, (M) for medium confidence, and (L) for low confidence. These confidence levels are based on field experience.
PLSS	Public Land Survey System
Pqg	Permian Queen/Greyburg Formation
Pru	Permian Rustler Formation
pseudokarst	Karst-like features (sinkholes, conduits, voids etc.) that are not formed by dissolution. These types of features include soil piping, lava tubes, and some cover-collapse and suffosion sinkholes.
Psl	Permian Salado Formation
Psr	Permian Seven Rivers Formation
Pt	Permian Tansill Formation
Py	Permian Yates Formation
Qal	Quaternary alluvium
Qe	Quaternary eolian deposits
Qp	Quaternary piedmont deposits
Qpl	Quaternary playa lake deposits
RKF	Recognized karst feature. This term is reserved for karst features that have been physically verified in the field.
SPAR	Small Party Assisted Rescue
sUAS	Small, uncrewed aerial system
suffosion sinkhole	Raveling of soil into a pre-existing void or fracture.
swallet	A natural opening in the surface, too small for a person, that drains water to an aquifer. Some are "open," meaning a void can be seen below; some are "closed," meaning they are full of sediment.
SWG	Southwest Geophysical Consulting, LLC
UTM	Universal Transverse Mercator (projected coordinates)
(V)	Field verified modifier for a RKF. This indicates that the feature has been visited by a qualified karst professional in the field and fully identified
WGS	World Geodetic System (geographic coordinates)

9.0 ATTESTATION

David D. Decker, PhD, PG, CPG

Chief Executive Officer, Principal Geologist

Southwest Geophysical Consulting, LLC

5117 Fairfax Dr. NW

Albuquerque, NM 87114

dave@swgeophys.com

(505) 585-2550

CERTIFICATE OF AUTHOR

I, David D. Decker, a Licensed Professional Geologist and a Certified Professional Geologist, do certify that:

- I am currently employed as a consulting geologist in the specialty of caves and karst with an office address of 5117 Fairfax Dr. NW, Albuquerque, NM, USA, 87114.
- I graduated with a Master of Science in Applied Physics with a specialization in Sensor Systems from the Naval Post Graduate School in Monterey, California, in 2003, and a Doctor of Philosophy in Earth and Planetary Sciences from the University of New Mexico, Albuquerque, New Mexico, in 2018.
- I am a Licensed Professional Geologist in the State of Texas, USA (PG-15242) and have been since 2021. I am a Certified Professional Geologist through the American Institute of Professional Geologists (CPG-12123) and have been since 2021.
- I have been employed as a geologist continuously since 2016. I was previously employed as a Fire Controlman, Naval Flight Officer, and Aerospace Engineering Duty Officer in the U.S. Navy and operated, maintained, and installed various sensor systems including magnetic, electromagnetic, radar, communications, and acoustic systems in various capacities from 1986 through 2010.
- I have been involved in various aspects of cave and karst studies continuously since 1985, including exploration, mapping, and scientific studies.
- I have read the definition of “qualified karst professional” set out in the ASTM Standard Practice for Preliminary Karst Terrain Assessment for Site Development (ASTM E-1527). I meet the definition of “qualified professional” for the purposes of this standard.
- I am responsible for the content, compilation, and editing of all sections of report number ENS-020-20250813 entitled, “Environmental Karst Study Report, XTO Western CDP, Eddy County, New Mexico.” I or a duly authorized and qualified representative of Southwest Geophysical Consulting, LLC, have personally visited this site and/or reviewed the aerial imagery on the date or dates mentioned in section **2.3 Description of Survey**.

- I have no prior involvement nor monetary interest in the described property or project, save for my fee for conducting this investigation and providing the report.

Dated in Albuquerque, New Mexico, September 30, 2025.




David D. Decker
PhD, CPG-12123


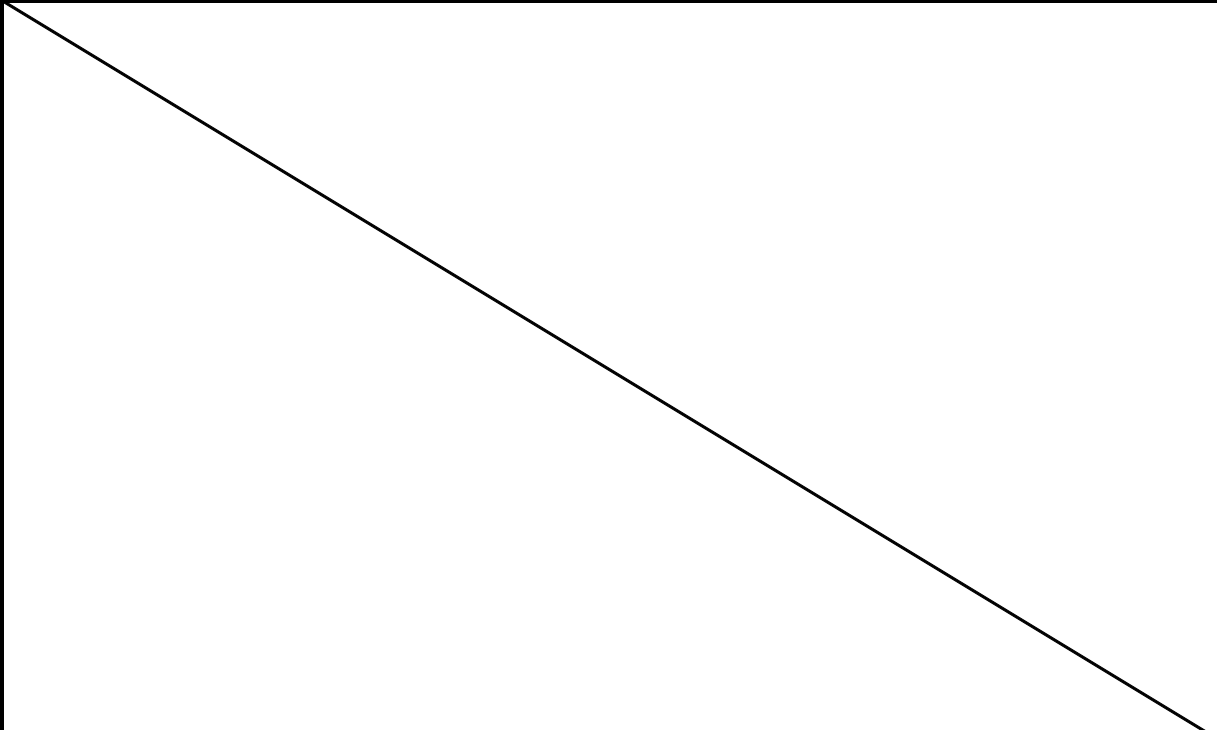




APPENDIX D

Lithologic Soil Sampling Logs

		Sample Name: PH01		Date: 7/22/2025				
		Site Name: Western CDP						
		Incident Number: nAPP2519241839						
		Job Number: 03C1558701						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.0636622, -103.8803636			Logged By: JD		Method: Hand Auger			
			Hole Diameter: 4"		Total Depth: 6'			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% chloride correction factor is included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<168	2,772	Y	PH01	0.5	0	CCHE	(0-1') CALICHE, light-brown to reddish, fine grained, poorly sorted, subrounded, unconsolidated, odor
D	<168	1,684	Y	PH01A	1	1	SP-SM	(1-7') SAND, light-brown to reddish, medium to fine grained, with silt, some gravel, poorly sorted, subrounded, odor
D	<168	157.2	Y		2	2		
D	<168	666	Y		3	3		
D	<168	326	N	PH01B	4	4		
						5		
D	<168	317	N	PH01C	6	6		No odor at 6 feet bgs
						Total Depth @ 6 feet bgs		

		Sample Name: PH02		Date: 7/22/2025					
		Site Name: Western CDP							
		Incident Number: nAPP2519241839							
		Job Number: 03C1558701							
LITHOLOGIC / SOIL SAMPLING LOG									
Coordinates: 32.0636968, -103.8804771			Logged By: JD		Method: Hand Auger				
			Hole Diameter: 4"		Total Depth: 4'				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% chloride correction factor is included.									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions	
D	<168	478	Y	PH02	0.5	0	CCHE	(0-1') CALICHE, light-brown to reddish, fine grained, poorly sorted, subrounded, unconsolidated, odor	
D	<168	628	Y		1	1	SP-SM	(1-4') SAND, light-brown to reddish, medium to fine grained, with silt, some gravel, poorly sorted, subrounded, odor	
D	<168	1,805	Y	PH02A	2	2		Strong odor at 2 feet bgs	
D	<168	115	N	PH02B	3	3		Weak odor at 3 feet bgs	
D	<168	27.4	N	PH02C	4	4		Weak odor at 4 feet bgs	
Total Depth @ 4 feet bgs									
									



APPENDIX E

Laboratory Analytical Reports & Chain-of-Custody Documentation



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

July 24, 2025

TRACY HILLARD

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: WESTERN CDP - SPILL

Enclosed are the results of analyses for samples received by the laboratory on 07/23/25 8:53.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 01 .5 (H254435-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	5.85	1.00	07/23/2025	ND	2.29	115	2.00	0.258	
Toluene*	96.4	1.00	07/23/2025	ND	2.20	110	2.00	0.363	
Ethylbenzene*	13.7	1.00	07/23/2025	ND	2.21	110	2.00	1.13	
Total Xylenes*	213	3.00	07/23/2025	ND	6.88	115	6.00	0.938	
Total BTEX	329	6.00	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 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	07/23/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	5490	50.0	07/24/2025	ND	199	99.6	200	0.476		
DRO >C10-C28*	12100	50.0	07/24/2025	ND	192	96.1	200	1.59		
EXT DRO >C28-C36	925	50.0	07/24/2025	ND						

Surrogate: 1-Chlorooctane 478 % 44.4-145

Surrogate: 1-Chlorooctadecane 195 % 40.6-153

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 01A 2 (H254435-02)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258		
Toluene*	0.096	0.050	07/23/2025	ND	2.20	110	2.00	0.363		
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.21	110	2.00	1.13		
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.88	115	6.00	0.938		
Total BTEX	<0.300	0.300	07/23/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	07/23/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	199	99.6	200	0.476		
DRO >C10-C28*	<10.0	10.0	07/23/2025	ND	192	96.1	200	1.59		
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND						

Surrogate: 1-Chlorooctane 92.1 % 44.4-145

Surrogate: 1-Chlorooctadecane 94.4 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 01B 4' (H254435-03)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258	
Toluene*	<0.050	0.050	07/23/2025	ND	2.20	110	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.21	110	2.00	1.13	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.88	115	6.00	0.938	
Total BTEX	<0.300	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/23/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	199	99.6	200	0.476	
DRO >C10-C28*	131	10.0	07/23/2025	ND	192	96.1	200	1.59	
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND					

Surrogate: 1-Chlorooctane 90.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 95.7 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 01C 6' (H254435-04)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258	
Toluene*	<0.050	0.050	07/23/2025	ND	2.20	110	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.21	110	2.00	1.13	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.88	115	6.00	0.938	
Total BTEX	<0.300	0.300	07/23/2025	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	256	16.0	07/23/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	199	99.6	200	0.476	
DRO >C10-C28*	17.4	10.0	07/23/2025	ND	192	96.1	200	1.59	
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND					

Surrogate: 1-Chlorooctane 83.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 86.6 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 02 .5 (H254435-05)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258	
Toluene*	<0.050	0.050	07/23/2025	ND	2.20	110	2.00	0.363	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.21	110	2.00	1.13	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.88	115	6.00	0.938	
Total BTEX	<0.300	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/23/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	11.9	10.0	07/24/2025	ND	199	99.6	200	0.476	
DRO >C10-C28*	189	10.0	07/24/2025	ND	192	96.1	200	1.59	
EXT DRO >C28-C36	<10.0	10.0	07/24/2025	ND					

Surrogate: 1-Chlorooctane 87.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 91.9 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 02A 2 (H254435-06)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258	
Toluene*	1.16	0.050	07/23/2025	ND	2.20	110	2.00	0.363	
Ethylbenzene*	0.329	0.050	07/23/2025	ND	2.21	110	2.00	1.13	
Total Xylenes*	5.32	0.150	07/23/2025	ND	6.88	115	6.00	0.938	
Total BTEX	6.81	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	32.0	16.0	07/23/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	196	10.0	07/24/2025	ND	199	99.6	200	0.476	
DRO >C10-C28*	1060	10.0	07/24/2025	ND	192	96.1	200	1.59	
EXT DRO >C28-C36	95.7	10.0	07/24/2025	ND					

Surrogate: 1-Chlorooctane 99.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 112 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 02B 3 (H254435-07)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258		
Toluene*	<0.050	0.050	07/23/2025	ND	2.20	110	2.00	0.363		
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.21	110	2.00	1.13		
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.88	115	6.00	0.938		
Total BTEX	<0.300	0.300	07/23/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	07/23/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/24/2025	ND	199	99.6	200	0.476		
DRO >C10-C28*	53.0	10.0	07/24/2025	ND	192	96.1	200	1.59		
EXT DRO >C28-C36	<10.0	10.0	07/24/2025	ND						

Surrogate: 1-Chlorooctane 88.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 93.2 % 40.6-153

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM, LLC
 TRACY HILLARD
 705 W WADLEY AVE.
 MIDLAND TX, 79705
 Fax To:

Received:	07/23/2025	Sampling Date:	07/22/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP - SPILL	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: PH 02C 4 (H254435-08)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2025	ND	2.29	115	2.00	0.258		
Toluene*	<0.050	0.050	07/23/2025	ND	2.20	110	2.00	0.363		
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.21	110	2.00	1.13		
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.88	115	6.00	0.938		
Total BTEX	<0.300	0.300	07/23/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/23/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/24/2025	ND	199	99.6	200	0.476		
DRO >C10-C28*	<10.0	10.0	07/24/2025	ND	192	96.1	200	1.59		
EXT DRO >C28-C36	<10.0	10.0	07/24/2025	ND						

Surrogate: 1-Chlorooctane 92.4 % 44.4-145

Surrogate: 1-Chlorooctadecane 93.3 % 40.6-153

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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3 of 3

BILL TO

ANALYSIS REQUEST

Company Name: Ensolum, LLC
 Project Manager: Tracy Hilliard
 Address: 601 N Marientfeld Street, Suite 400
 City: Midland State: TX Zip: 79701
 Phone #: 575-937-3906 Fax #:
 Project #: 03C1558701 Project Owner: XTO Energy
 Project Name: Western CDP - Spill City: Carlsbad
 Project Location: 32.06367, -103.87966 State: NM Zip: 88220
 Phone #:
 Sampler Name: Jesse Dorman Fax #:
 FOR LAB USE ONLY

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	TPH 8015	BTEX 8021	Chloride 4500
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
HS2435	PH02	5	G	1								2/2/25	12:50			
	PH02A	3	G	1								12:45				
	PH02B	3	G	1								12:45				
	PH02C	4	G	1								12:45				
		70														

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Relinquished By: *[Signature]* Date: 07/23/25 Received By: *[Signature]* Date: 07/23/25
 Relinquished By: *[Signature]* Date: 7:38 Received By: *[Signature]* Date: 7:38
 Delivered By: (Circle One) UPS Bus Other: *Standard*
 Observed Temp. °C: 2.4 Corrected Temp. °C: 2.7
 Sample Condition: Intact Cool Yes No
 CHECKED BY: *[Signature]*
 Turnaround Time: *4:00* Standard Rush
 Thermometer ID: #1111 Corrected Temp. °C: 2.4
 Bacteria (only) Sample Condition: Intact Cool Yes No
 Corrected Temp. °C:
 Verbal Result: Yes No Add'l Phone #:
 All Results are emailed. Please provide Email address: jreich@ensolum.com
 EMail: Ebellill@ensolum.com, TMorrissey@ensolum.com, Jdorman@ensolum.com
 THilland@ensolum.com, KThomason@ensolum.com
 REMARKS: Incident Number: NAPP2519241839 Cost Center: 1083971001 GFCM: 48605000



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

October 07, 2025

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: WESTERN CDP

Enclosed are the results of analyses for samples received by the laboratory on 10/03/25 16:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 01 0.5 (H256211-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83	
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65	
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08	
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59	
Total BTEX	<0.300	0.300	10/06/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 70.4-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/06/2025	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/04/2025	ND	175	87.7	200	2.38	
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16	
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND					

Surrogate: 1-Chlorooctane 62.7 % 52.4-130

Surrogate: 1-Chlorooctadecane 61.2 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 02 0.5 (H256211-02)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/06/2025	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 75.5 % 52.4-130

Surrogate: 1-Chlorooctadecane 73.2 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 03 0.5 (H256211-03)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 73.7 % 52.4-130

Surrogate: 1-Chlorooctadecane 71.2 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 04 0.5 (H256211-04)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 67.7 % 52.4-130

Surrogate: 1-Chlorooctadecane 65.3 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/03/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 05 0.5 (H256211-05)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 78.8 % 52.4-130

Surrogate: 1-Chlorooctadecane 76.8 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 06 0.5 (H256211-06)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 80.1 % 52.4-130

Surrogate: 1-Chlorooctadecane 77.1 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 07 0.5 (H256211-07)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 75.2 % 52.4-130

Surrogate: 1-Chlorooctadecane 76.3 % 39.9-141

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/02/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 08 0.5 (H256211-08)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 70.4-141

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 77.6 % 52.4-130

Surrogate: 1-Chlorooctadecane 75.1 % 39.9-141

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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/03/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 09 0.5 (H256211-09)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 82.4 % 52.4-130

Surrogate: 1-Chlorooctadecane 79.4 % 39.9-141

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Analytical Results For:

ENSOLUM
 TRACY HILLARD
 3122 NATIONAL PARKS HWY
 CARLSBAD NM, 88220
 Fax To:

Received:	10/03/2025	Sampling Date:	10/03/2025
Reported:	10/07/2025	Sampling Type:	Soil
Project Name:	WESTERN CDP	Sampling Condition:	Cool & Intact
Project Number:	03C1558701	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.06367, -103.87966		

Sample ID: SS 10 0.5 (H256211-10)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/06/2025	ND	1.66	83.0	2.00	4.83		
Toluene*	<0.050	0.050	10/06/2025	ND	1.75	87.3	2.00	3.65		
Ethylbenzene*	<0.050	0.050	10/06/2025	ND	1.78	88.9	2.00	2.08		
Total Xylenes*	<0.150	0.150	10/06/2025	ND	5.54	92.4	6.00	1.59		
Total BTEX	<0.300	0.300	10/06/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 70.4-141

Chloride, SM4500CI-B		mg/kg		Analyzed By: KH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/06/2025	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	10/04/2025	ND	175	87.7	200	2.38		
DRO >C10-C28*	<10.0	10.0	10/04/2025	ND	176	87.8	200	2.16		
EXT DRO >C28-C36	<10.0	10.0	10/04/2025	ND						

Surrogate: 1-Chlorooctane 85.5 % 52.4-130

Surrogate: 1-Chlorooctadecane 81.8 % 39.9-141

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Notes and Definitions

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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 1

Company Name: Ensolum, LLC

Project Manager: Tracy Hilliard

Address: 3122 National Parks Hwy

City: Carlsbad

Phone #: 575 937 3906

Project #: 03C1558701

Project Name: Western CDP

Project Location: 32.06367, -103.87966

Sampler Name: Joshua Isakley

FOR LAB USE ONLY

BILL TO

P.O. #:

Company: XTO Energy Inc

Attn: Colton Brown

Address: 3104 E Green St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							DATE	TIME	Chlorides	TPH	BTEX
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
HAS10a11	5501	0.5	G	1	X							10.2.25	0835	X	X	X
	5502												0840			
	5503												0845			
	5504												0950			
	5505												10.3.25			
	5506												10.2.25			
	5507												10.2.25			
	5508												10.3.25			
	5509												1145			
	5510												10.3.25			

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Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Date: 10-3-25

Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

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Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Verbal Result: Yes No Add'l Phone #:

Relinquished By: [Signature]

Date: 10-3-25

Received By: [Signature]

Verbal Result: Yes No Add'l Phone #:

FORM-006 R.3.2.10/07/21

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



APPENDIX F

Spill Volume Calculation

Location:	Western CDP	
Spill Date:	7/10/2025	
Incident #:		
Area 1		
Approximate Area =	14300	sq. ft.
Average Saturation (or depth) of spill =	0.15	inches
Average Porosity Factor =	0.15	
VOLUME OF LEAK		
Total Crude Oil =	145.00	bbls
Total Produced Water =		bbls
Area 2		
Approximate Area =		sq. ft.
Average Saturation (or depth) of spill =		inches
VOLUME OF LEAK		
Total Crude Oil =		bbls
Total Produced Water =		bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	145.00	bbls
Total Produced Water =		bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	140.00	bbls
Total Produced Water =		bbls

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

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

QUESTIONS

Action 484229

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 484229
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2519241839
Incident Name	NAPP2519241839 WESTERN CDP @ 0
Incident Type	Oil Release
Incident Status	Initial C-141 Received

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	Western CDP
Date Release Discovered	07/10/2025
Surface Owner	Federal

Incident Details	
<i>Please answer all the questions in this group.</i>	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Cause: Equipment Failure Pipeline (Any) Crude Oil Released: 145 BBL Recovered: 140 BBL Lost: 5 BBL.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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**State of New Mexico
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Oil Conservation Division
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QUESTIONS, Page 2

Action 484229

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 484229
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 07/11/2025
--	--

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Oil Conservation Division
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QUESTIONS, Page 3

Action 484229

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 484229
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

QUESTIONS

Site Characterization

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Not answered.
What method was used to determine the depth to ground water	Not answered.
Did this release impact groundwater or surface water	Not answered.
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Not answered.
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Not answered.
An occupied permanent residence, school, hospital, institution, or church	Not answered.
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Not answered.
Any other fresh water well or spring	Not answered.
Incorporated municipal boundaries or a defined municipal fresh water well field	Not answered.
A wetland	Not answered.
A subsurface mine	Not answered.
An (non-karst) unstable area	Not answered.
Categorize the risk of this well / site being in a karst geology	Not answered.
A 100-year floodplain	Not answered.
Did the release impact areas not on an exploration, development, production, or storage site	Not answered.

Remediation Plan

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	No
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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

CONDITIONS

Action 484229

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 484229
	Action Type: [C-141] Initial C-141 (C-141-v-Initial)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	7/11/2025

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

QUESTIONS

Action 552012

QUESTIONS

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2519241839
Incident Name	NAPP2519241839 WESTERN CDP @ A-09-26S-30E
Incident Type	Oil Release
Incident Status	Remediation Plan Received

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	WESTERN CDP
Date Release Discovered	07/10/2025
Surface Owner	Federal

Incident Details	
<i>Please answer all the questions in this group.</i>	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Cause: Equipment Failure Pipeline (Any) Crude Oil Released: 145 BBL Recovered: 140 BBL Lost: 5 BBL.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505**

QUESTIONS, Page 2

Action 552012

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEEnvNotifications@exxonmobil.com Date: 02/09/2026
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QUESTIONS, Page 3

Action 552012

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	None
A 100-year floodplain	Between 1000 (ft.) and ½ (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	256
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	18515
GRO+DRO (EPA SW-846 Method 8015M)	17590
BTEX (EPA SW-846 Method 8021B or 8260B)	329
Benzene (EPA SW-846 Method 8021B or 8260B)	5.9

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	07/11/2025
On what date will (or did) the final sampling or liner inspection occur	05/02/2026
On what date will (or was) the remediation complete(d)	05/02/2026
What is the estimated surface area (in square feet) that will be reclaimed	13300
What is the estimated volume (in cubic yards) that will be reclaimed	1970
What is the estimated surface area (in square feet) that will be remediated	13300
What is the estimated volume (in cubic yards) that will be remediated	1970

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 4

Action 552012

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Remediation Plan (continued)

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:

(Select all answers below that apply.)

(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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.

I hereby agree and sign off to the above statement	Name: Richard Kotzur Title: Senior Project Manager Email: NMEnvNotifications@exxonmobil.com Date: 02/09/2026
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The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 5

Action 552012

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Deferral Requests Only	
<i>Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 552012

QUESTIONS (continued)

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	513846
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	10/15/2025
What was the (estimated) number of samples that were to be gathered	40
What was the sampling surface area in square feet	8000

Remediation Closure Request

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	No
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CONDITIONS

Action 552012

CONDITIONS

Operator: XTO ENERGY, INC 3617 North Big Spring Street Midland, TX 79705	OGRID: 5380
	Action Number: 552012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan is approved with the following conditions:	3/6/2026
scwells	1) The Environmental Karst Study Report is accepted for nAPP2519241839.	3/6/2026
scwells	2) Horizontal delineation is incomplete. Ensure horizontal delineation is achieved on the east and west sides of the release extent during remediation.	3/6/2026
scwells	3) As GRO+DRO exceeds Table 1 RRAL's at 2' depth in PH02A, this area will be required to be excavated beyond this. Excavation must continue past proposed depth(s) if confirmation samples do not meet the applicable Table 1 Closure Criteria.	3/6/2026
scwells	4) OCD requires that any base or wall that is exposed during excavation, even due to benching and sloping, have samples collected pursuant to 19.15.29 NMAC. Ensure sidewall samples are collected between the varying depths of excavation and clearly show these on the Figures in your closure report.	3/6/2026
scwells	Submit a remediation closure report to the OCD by June 4, 2026.	3/6/2026