



August 29, 2024

**New Mexico Oil Conservation Division**

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

**Re: Remediation Work Plan  
Ross Draw 25 #31 Battery  
Incident Number NAPP2419856452  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Remediation Work Plan (Work Plan)* to document the site assessment activities completed to date and propose a work plan to address waste-containing soil identified at the Ross Draw 25 #31 Battery (Site). The purpose of the site assessment activities was to determine the presence or absence of impacted soil resulting from a crude oil and produced water release at the Site. The following *Work Plan* proposes to remove waste-containing soil identified within the release extent.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit D, Section 25, Township 26 South, Range 29 East, in Eddy County, New Mexico (32.01946°, -103.94272°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On June 12, 2024, corrosion of a dump line resulted in the release of 7 barrels (bbls) of crude oil and 83 bbls of produced water onto the pad surface and into the adjacent pasture area. A vacuum truck was immediately dispatched and recovered 4 bbls of crude oil and 56 bbls of produced water. XTO submitted a Notification of Release (NOR) and an Initial C-141 Application (C-141) on July 16, 2024. The release was assigned Incident Number NAPP2419856452.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to assess the applicability of Table 1, 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 and 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 a soil boring drilled for determination of regional groundwater depth. In August 2021, a soil boring permitted by New Mexico Office of the State Engineer (C-4561) was completed approximately 0.1 miles northeast of the Site utilizing hollow stem auger method. Soil boring C-4575 was drilled to a depth of 105 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The temporary well was left open for over 72

XTO Energy, Inc.  
Remediation Work Plan  
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hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 105 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. The Well Record & Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 791 feet northwest 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 is not underlain by unstable geology (medium potential karst designation area).

Based on the results of the Site Characterization, the following NMOCD Table 1 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

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet of pasture area that was impacted by the releases, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation.

## SITE ASSESSMENT AND DELINEATION ACTIVITIES

On June 14, 2024 Ensolum personnel conducted a Site visit to evaluate the release extent based on information provided from XTO and visual observations. Sixteen assessment samples (SS01 through SS16) were collected from a depth of 0.5 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. The release extent and assessment soil samples were mapped utilizing a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B.

On August 8, 2024, Ensolum personnel returned to the site to oversee delineation activities. Delineation boreholes BH01 through BH05 and BH07 through BH09 were advanced via hand auger in the respective assessment soil sample locations to assess the vertical extent of the release to a maximum depth of 2 feet bgs. Discrete delineation soil samples were collected from each borehole at depths ranging from 0.5 feet to 2 feet bgs. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Appendix C. Delineation and assessment soil sample locations are depicted on Figure 2.

The 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

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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 SM4500.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all assessment soil samples around the release (SS10 through SS16) indicated all COCs were compliant with the Closure Criteria at a depth of 0.5 feet bgs, successfully defining the lateral extent of the release. Assessment soil sample SS01, collected within the release extent in the pasture area, exceeded reclamation requirement for TPH and chloride concentration. Assessment soil sample SS02, collected within the release extent in the pasture area, exceeded reclamation requirement for chloride concentration. Assessment soil samples within the release extent on pad, SS05 through SS07, exceeded Closure Criteria for TPH-GRO/TPH-DRO and TPH concentrations. All other assessment soil samples within the release extent on pad, SS03, SS04, SS08, and SS09, met Closure Criteria. All terminal soil samples of the delineation boreholes were in compliance with the Closure Criteria, successfully defining the vertical extent of the release. The laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included in Appendix D.

## PROPOSED REMEDIATION WORK PLAN

The delineation soil sampling results indicate soil containing elevated TPH and chloride concentrations exist across an approximate 23,286 square foot area on-pad and 1,200 square foot area in the adjacent pasture and extends to depths ranging from 0.5 feet to 2 feet bgs. XTO proposes to complete the following remediation activities:

- A BLM sundry will be completed for land access to excavate the pasture area. Upon approval of the BLM sundry or approval of this *Work Plan* by the NMOCD, whichever is later, excavation activities will be completed within 90 days.
- Excavation of waste-containing soil to depths ranging from 0.5 feet to 2 feet bgs. Excavation will proceed laterally until sidewall samples confirm all COC concentrations are compliant with the Closure Criteria.
- XTO proposes five-point composite samples to be collected at a sampling frequency of 200 square feet along the excavation floor and along the excavation sidewalls. The soil samples will be handled as described above and analyzed for all COCs.
- An estimated 1,360 cubic yards of waste-containing soil will be excavated and disposed of at the R360 disposal facility in Hobbs, New Mexico
- The excavation will be backfilled with locally procured material and recontoured to match pre-existing conditions.

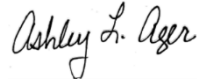
If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or [tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com).

XTO Energy, Inc.  
Remediation Work Plan  
Ross Draw 25 #31 Battery

Sincerely,  
**Ensolum, LLC**



Tracy Hillard  
Staff Engineer



Ashley Ager, PG, MS  
Program Director

cc: Amy Ruth, XTO  
Amanda Garcia, XTO  
BLM

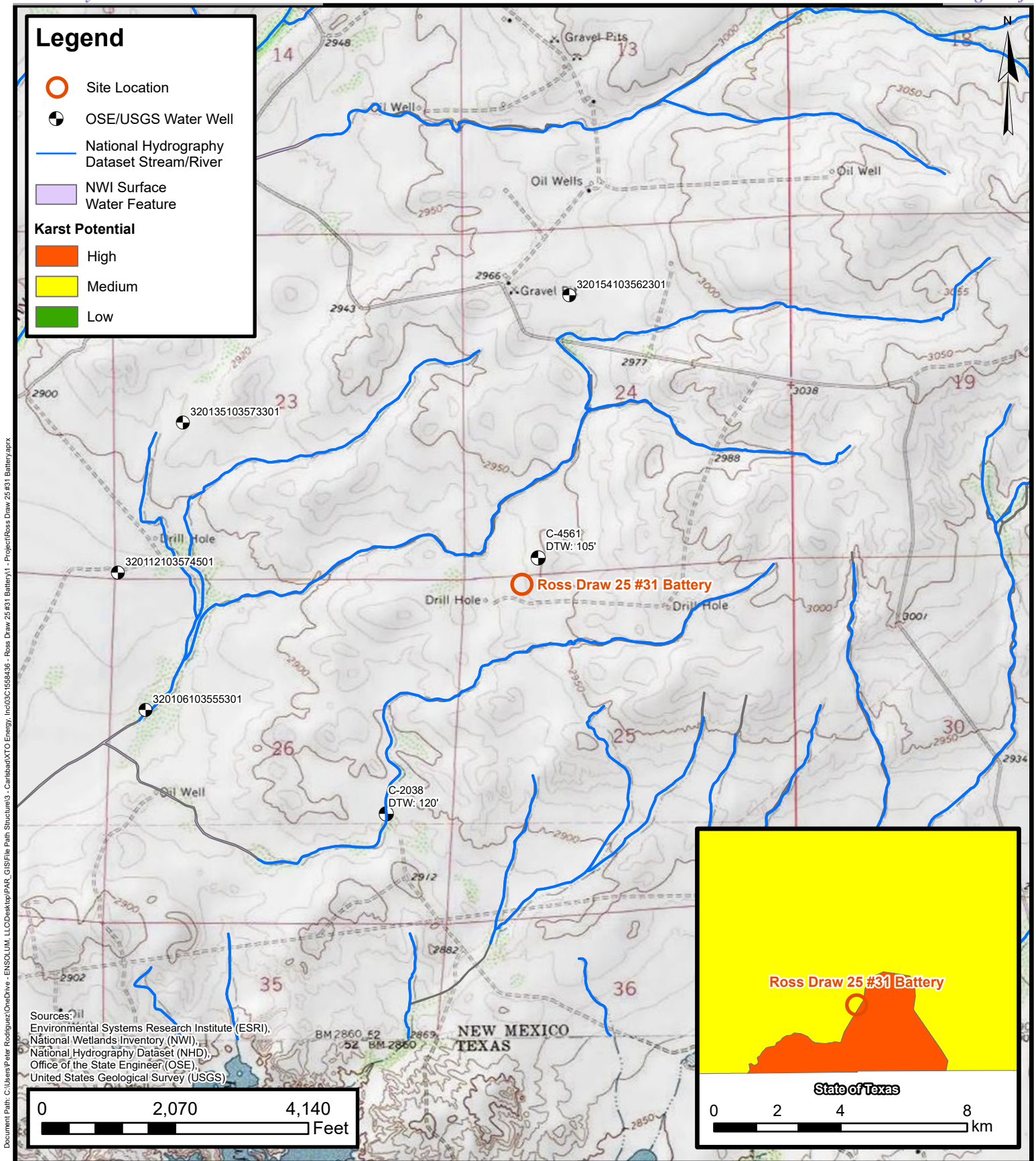
Appendices:

Figure 1	Site Location 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	Lithologic / Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation



FIGURES





## Site Receptor Map

XTO Energy, Inc

Ross Draw 25 #31 Battery

Incident Number: nAPP2419856452

Unit D, Sec 25, T26S, R29E

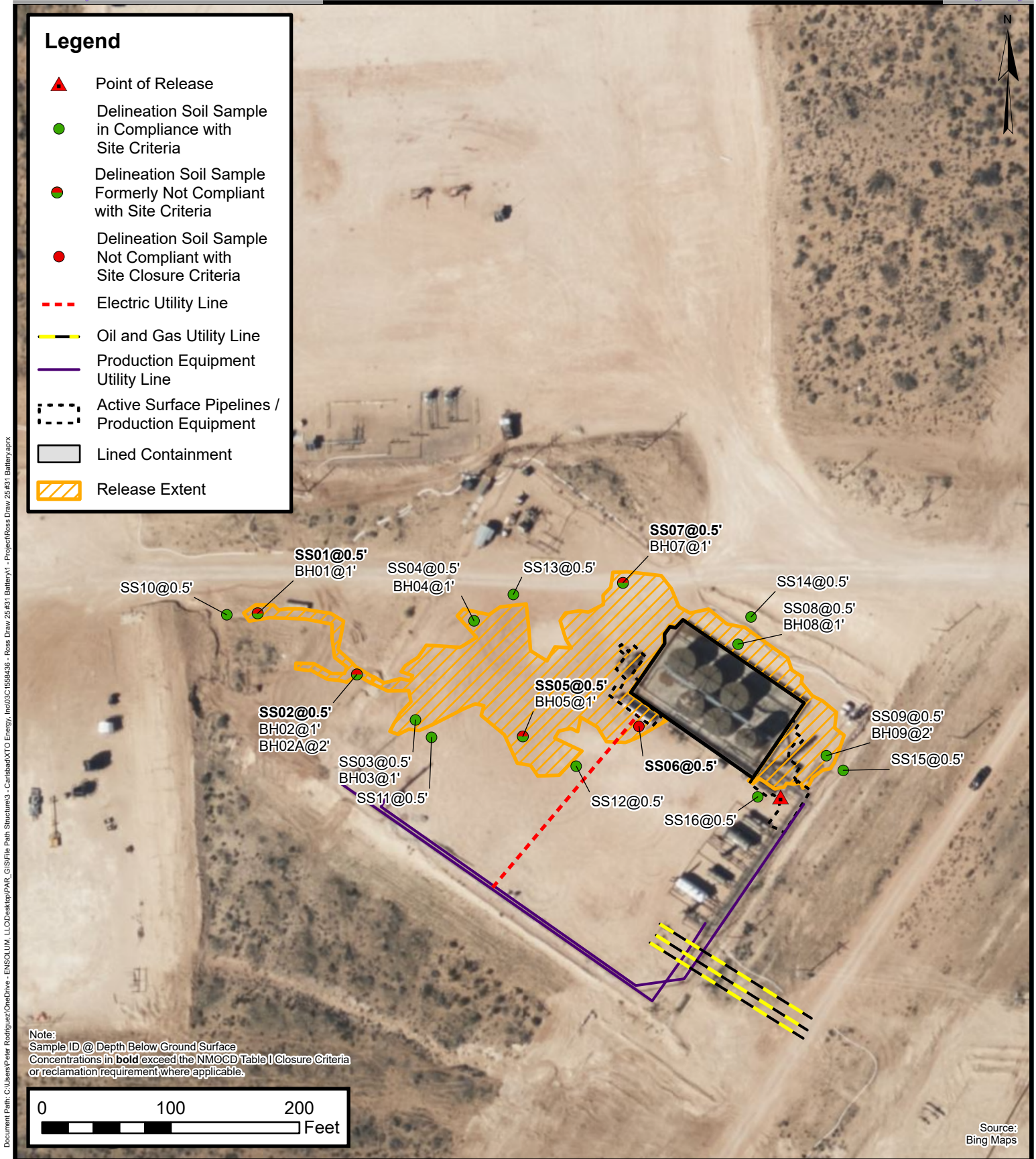
Eddy County, New Mexico

FIGURE

1

**ENSOLUM**  
 Environmental, Engineering and  
 Hydrogeologic Consultants



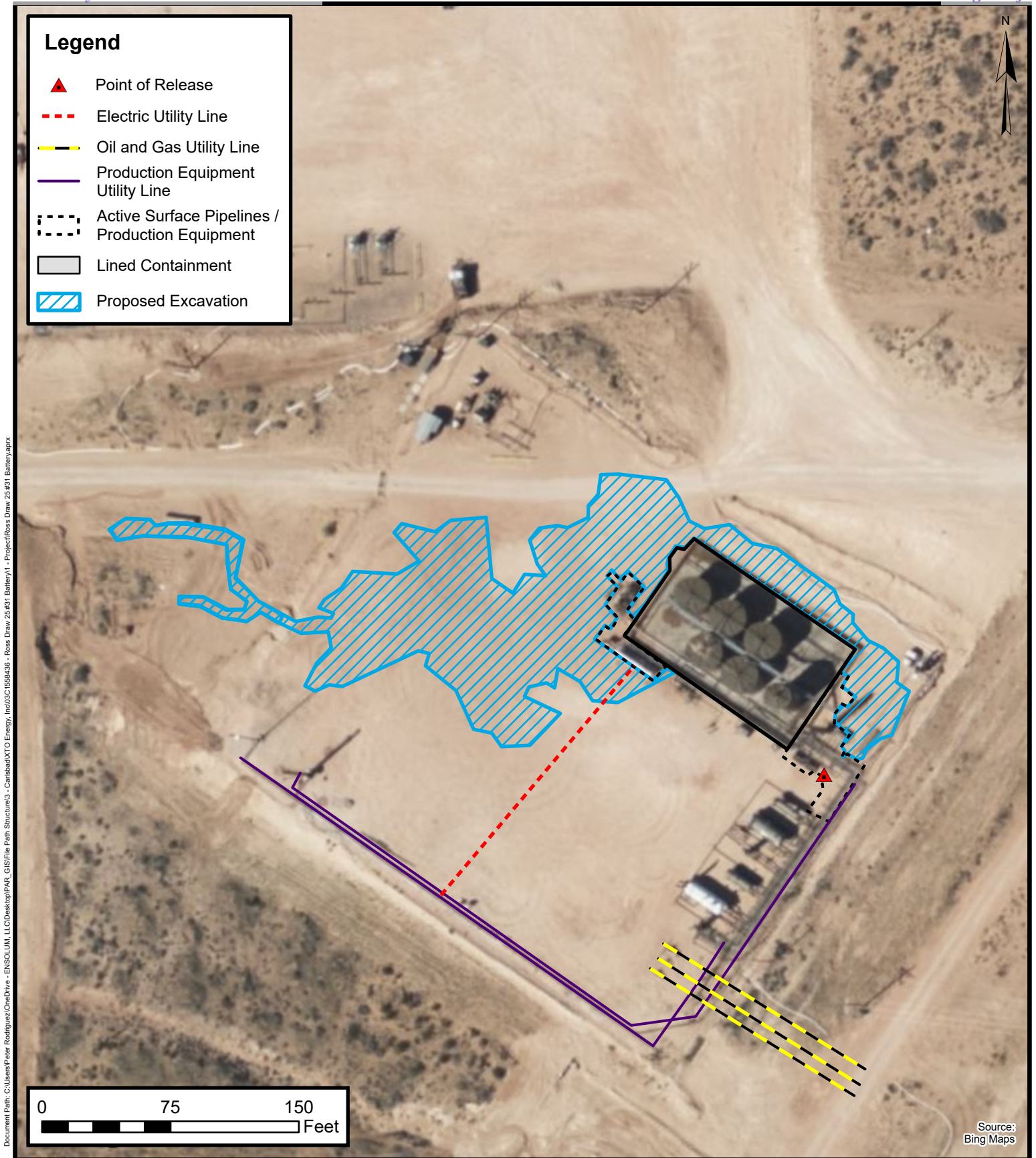


## Delineation Soil Sample Locations

XTO Energy, Inc  
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Unit D, Sec 25, T26S, R29E  
Eddy County, New Mexico

**FIGURE**  
**2**





## Proposed Excavation Extent

XTO Energy, Inc  
Ross Draw 25 #31 Battery  
Incident Number: nAPP2419856452  
Unit D, Sec 25, T26S, R29E  
Eddy County, New Mexico

**FIGURE**  
**3**





TABLES



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 Ross Draw 25 #31 Battery  
 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
Assessment Soil Samples										
SS01	06/14/2024	0.5	<0.050	<0.300	<10.0	515	126	515	<b>641</b>	<b>5,200</b>
BH01	08/08/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS02	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<b>4,320</b>
BH02	08/08/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	624
BH02A	08/08/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS03	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	8,400
BH03	08/08/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS04	06/14/2024	0.5	<0.050	<0.300	10.1	81.7	<10.0	91.8	91.8	12,400
BH04	08/08/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
SS05	06/14/2024	0.5	0.122	0.876	19.5	2,120	441	<b>2,140</b>	<b>2,581</b>	14,000
BH05	08/08/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SS06	06/14/2024	0.5	<0.050	<0.300	65.8	5,580	1,010	<b>5,646</b>	<b>6,656</b>	11,400
SS07	06/14/2024	0.5	<0.050	0.871	164	9,410	1,830	<b>9,574</b>	<b>11,404</b>	11,000
BH07	08/08/2024	1	<0.050	<0.300	<10.0	11.1	<10.0	11.1	11.1	128
SS08	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	10,800
BH08	08/08/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	416
SS09	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	12,200
BH09	08/08/2024	2	<0.050	<0.300	<10.0	10.2	<10.0	10.2	10.2	928



TABLE 1  
SOIL SAMPLE ANALYTICAL RESULTS  
Ross Draw 25 #31 Battery  
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
SS10	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS11	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS12	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS13	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS14	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
SS15	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS16	06/14/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0

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

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# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

OSE DJT AUG 17 2021 PM 3:11

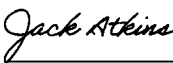
1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (BH-01)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4561		
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)		
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 1	SECONDS 14.17 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND		
		LONGITUDE 103	56	30.83 W	* DATUM REQUIRED: WGS 84		
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SE SW Sec. 31T23S R33E							
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.	
	DRILLING STARTED 07/28/2021		DRILLING ENDED 07/28/2021		DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 105	DEPTH WATER FIRST ENCOUNTERED (FT) n/a
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) n/a	
	DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:						
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger						
	DEPTH (feet bgl) FROM TO		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)
	0 105		±6.5	Boring- HSA	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl) FROM TO		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL		AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO.	C-4561	POD NO.	POD1	TRN NO.	701043
LOCATION	24S-29E-24 433			WELL TAG ID NO.	PAGE 1 OF 2

DSE DTI AUG 17 2021 PM3:11

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)
	FROM	TO				
	0	5	5	Caliche, poor- moderate consolidation, Off white-tan	Y    ✓ N	
	5	10	5	Sand, fine grained, poorly graded, with caliche gravel, Reddish Brown	Y    ✓ N	
	10	25	15	Clayey Sand, fine grained, poorly graded, Reddish Brown	Y    ✓ N	
	25	30	5	Silty Sand, fine grained, poorly graded, Reddish Brown , Dry	Y    ✓ N	
	30	45	15	Gravelly Silty, some gypsum, graded, Reddish Brown , Dry	Y    ✓ N	
	45	60	15	Siltstone, poorly cemented, Reddish Brown, Dry	Y    ✓ N	
	60	105	45	Claystone, Low plasticity,cohesive, some gypsum, Reddish Brown-Dark , moist	Y    ✓ N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY:				TOTAL ESTIMATED WELL YIELD (gpm):                      0.00	
	5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.			
MISCELLANEOUS INFORMATION:    Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.						
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge, Carmelo Trevino, Cameron Pruitt						
6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:					
				Jackie D. Atkins		08/16/2021
	SIGNATURE OF DRILLER / PRINT SIGNED NAME			DATE		

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO.	C-456	POD NO.	POD 1
LOCATION	24S-29E-74433	TRN NO.	701043
		WELL TAG ID NO.	PAGE 2 OF 2





## APPENDIX B

### Photographic Log

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**Photographic Log**  
 XTO Energy, Inc  
 Ross Draw 25 #31 Battery  
 nAPP2419856452



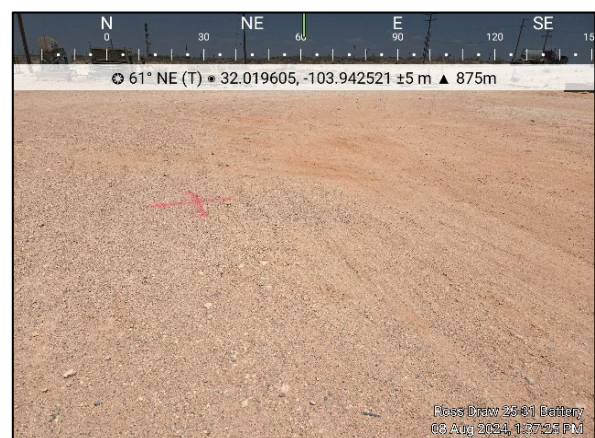
Photograph: 1 Date: 6/14/2024  
 Description: Soil staining in release footprint  
 View: Southeast



Photograph: 2 Date: 6/14/2024  
 Description: Soil staining in release footprint  
 View: South



Photograph: 3 Date: 8/8/2024  
 Description: Delineation Activities  
 View: East



Photograph: 4 Date: 8/8/2024  
 Description: Delineation Activities  
 View: Northeast





## APPENDIX C


### Lithologic Soil Sampling Logs


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					Sample Name: BH01		Date: 8/8/2024	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Site Name: Ross Draw 25 #31 Battery			
					Incident Number: NAPP2419856452			
					Job Number: 03C1558436			
Coordinates: 32.019653, -103.943018					Logged By: JD		Method: Hand Auger	
					Hole Diameter: 4"		Total Depth: 1'	
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% correction factor was included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	5,258		N	SS01	0.5	0	SP	(0-1') SAND, reddish brown, very fine, poorly graded, no odor
D	<162	0.0	N	BH01	1	1		
						Total Depth @ 1-foot bgs		


								Sample Name: BH02		Date: 8/8/2024	
								Site Name: Ross Draw 25 #31 Battery			
								Incident Number: NAPP2419856452			
								Job Number: 03C1558436			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: JD		Method: Hand Auger	
Coordinates: 32.019529, -103.942790								Hole Diameter: 4"		Total Depth: 2'	
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% correction factor was included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0	SP	(0-2') SAND, reddish brown, very fine, trace silt, poorly graded, trace caliche			
D	5,258		N	SS02	0.5						
D	800.8	0.0	N	BH02	1	1					
D	<162	0.0	N	BH02A	2	2					
						Total Depth @ 2 feet bgs					


								Sample Name: BH03		Date: 8/8/2024	
								Site Name: Ross Draw 25 #31 Battery			
								Incident Number: NAPP2419856452			
								Job Number: 03C1558436			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: JD		Method: Hand Auger	
Coordinates: 32.019421, -103.942630								Hole Diameter: 4"		Total Depth: 2'	
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% correction factor was included.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
						0	CCHE	(0-2') CALICHE, tan, fine grained			
D	17,320	0.0	N	SS03	0.5						
D	<162	0.0	N	BH03	1	1		(@1') some reddish brown silt			
D	<162	0.0	N		2	2					
Total Depth @ 2 feet bgs											


 <b>ENSOLUM</b>		Sample Name: BH04		Date: 8/8/2024				
		Site Name: Ross Draw 25 #31 Battery						
		Incident Number: NAPP2419856452						
		Job Number: 03C1558436						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.019630, -103.942472			Logged By: JD		Method: Hand Auger			
			Hole Diameter: 4"		Total Depth: 2'			
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% correction factor was included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	(0-1') CALICHE, tan, fine grained
D	14,677	0.0	N	SS04	0.5			
D	230	0.0	N	BH04	1	1		(1-2') SAND, brown, very fine grained, no odor poorly graded
D	<162	0.0	N		2	2		
						Total Depth @ 2 feet bgs		



 <b>ENSOLUM</b>		Sample Name: BH05		Date: 8/8/2024				
		Site Name: Ross Draw 25 #31 Battery						
		Incident Number: NAPP2419856452						
		Job Number: 03C1558436						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>				Logged By: JD		Method: Hand Auger		
Coordinates: 32.019381, -103.942353				Hole Diameter: 4"		Total Depth: 1'		
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% correction factor was included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	15,926	0.0	N	SS05	0.5	0	CCHE	(0-1') CALICHE, tan, fine grained
D	<162	0.0	N	BH05	1	1	SP	(@1') SAND, brown, very fine grained, no odor poorly graded
Total Depth @ 1-foot bgs								
<div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-bottom: 1px solid black;"></div>								

					Sample Name: BH07		Date: 8/8/2024	
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>					Site Name: Ross Draw 25 #31 Battery			
					Incident Number: NAPP2419856452			
					Job Number: 03C1558436			
Coordinates: 32.019697, -103.942102					Logged By: JD		Method: Hand Auger	
					Hole Diameter: 4"		Total Depth: 1'	
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% correction factor was included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	(0-1') CALICHE, tan, fine grained
D	17,320	0.0	N	SS07	0.5			
D	162	0.0	N	BH07	1	1		(@1') some reddish brown silt
						Total Depth @ 1-foot bgs		

		Sample Name: BH08		Date: 8/8/2024				
		Site Name: Ross Draw 25 #31 Battery						
		Incident Number: NAPP2419856452						
		Job Number: 03C1558436						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>				Logged By: JD		Method: Hand Auger		
Coordinates: 32.019572, -103.941801				Hole Diameter: 4"		Total Depth: 1'		
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% correction factor was included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	15,926	0.0	N	SS08	0.5	0	CCHE	(0-1') CALICHE, tan, fine grained
D	302	0.0	N	BH08	1	1	SP	(@1') SAND, brown, very fine grained, no odor poorly graded
Total Depth @ 1-foot bgs								
<div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-bottom: 1px solid black;"></div>								

		Sample Name: BH09		Date: 8/8/2024				
		Site Name: Ross Draw 25 #31 Battery						
		Incident Number: NAPP2419856452						
		Job Number: 03C1558436						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>				Logged By: JD		Method: Hand Auger		
Coordinates: 32.019373, -103.941643				Hole Diameter: 4"		Total Depth: 2'		
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% correction factor was included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	14,677		N	SS09	0.5	0	CCHE	(0-1') CALICHE, tan, fine grained
D	1,758	0.0	N		1	1	SP	(1-2') SAND, brown, very fine grained, no odor poorly graded
D	1,221	0.0	N	BH09	2	2		(@2') Trace clay
Total Depth @ 2 feet bgs - hand auger refusal								
<div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border-left: 1px solid black; border-top: 1px solid black;"></div>								





## APPENDIX D

### Laboratory Analytical Reports & Chain of Custody Documentation

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

June 24, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: ROSS DRAW 25-31 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 06/18/24 14:18.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received:	06/18/2024	Sampling Date:	06/14/2024
Reported:	06/24/2024	Sampling Type:	Soil
Project Name:	ROSS DRAW 25-31 BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C1558436	Sample Received By:	Alyssa Parras
Project Location:	XTO		

**Sample ID: SS 01 0.5' (H243574-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTX	<0.300	0.300	06/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5200	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	515	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	126	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 80.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.1 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 02 0.5' (H243574-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24		
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4320	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 81.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 03 0.5' (H243574-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24		
Toluene*	<0.050	0.050	06/21/2024	ND	2.08	104	2.00	4.23		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8400	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 77.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 72.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 04 0.5' (H243574-04)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24		
<b>Toluene*</b>	<b>0.051</b>	0.050	06/21/2024	ND	2.08	104	2.00	4.23		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	6.36	106	6.00	3.83		
Total BTEX	<0.300	0.300	06/21/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	12400	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	10.1	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	81.7	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 77.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.6 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 05 0.5' (H243574-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	0.122	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24		
Toluene*	0.289	0.050	06/21/2024	ND	2.08	104	2.00	4.23		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	2.13	106	2.00	3.88		
Total Xylenes*	0.465	0.150	06/21/2024	ND	6.36	106	6.00	3.83		
Total BTEX	0.876	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 125 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	14000	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	19.5	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	2120	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	441	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 84.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 06 0.5' (H243574-06)**

BTEx 8021B			mg/kg		Analyzed By: JH			S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/22/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	<0.050	0.050	06/22/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	<0.050	0.050	06/22/2024	ND	2.13	106	2.00	3.88	
<b>Total Xylenes*</b>	<b>0.270</b>	0.150	06/22/2024	ND	6.36	106	6.00	3.83	
Total BTEX	<0.300	0.300	06/22/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 154 % 71.5-134

Chloride, SM4500Cl-B			mg/kg					Analyzed By: HM	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>11400</b>	16.0	06/20/2024	ND	448	112	400	7.41	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>65.8</b>	10.0	06/20/2024	ND	179	89.5	200	5.14	
<b>DRO &gt;C10-C28*</b>	<b>5580</b>	10.0	06/20/2024	ND	173	86.6	200	10.1	
<b>EXT DRO &gt;C28-C36</b>	<b>1010</b>	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 98.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 07 0.5' (H243574-07)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.99	99.5	2.00	4.24	
Toluene*	0.092	0.050	06/21/2024	ND	2.08	104	2.00	4.23	
Ethylbenzene*	0.057	0.050	06/21/2024	ND	2.13	106	2.00	3.88	
Total Xylenes*	0.721	0.150	06/21/2024	ND	6.36	106	6.00	3.83	
Total BTEX	0.871	0.300	06/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	11000	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	164	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	9410	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	1830	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 195 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 08 0.5' (H243574-08)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10800	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 83.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 09 0.5' (H243574-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	12200	16.0	06/20/2024	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 84.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 10 0.5' (H243574-10)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.9 % 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	06/20/2024	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	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 84.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 11 0.5' (H243574-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.1 % 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	80.0	16.0	06/20/2024	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	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 74.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 12 0.5' (H243574-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.0 % 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	48.0	16.0	06/20/2024	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	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 77.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 13 0.5' (H243574-13)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 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	06/20/2024	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	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 63.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 59.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 14 0.5' (H243574-14)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97	
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31	
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735	
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658	
Total BTEX	<0.300	0.300	06/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.2 % 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	240	16.0	06/20/2024	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	06/20/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/20/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/20/2024	ND					

Surrogate: 1-Chlorooctane 72.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 67.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 15 0.5' (H243574-15)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.1 % 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	16.0	16.0	06/20/2024	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	06/21/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/21/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/21/2024	ND					

Surrogate: 1-Chlorooctane 80.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.0 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM  
DAVID MCINNIS  
3122 NATIONAL PARKS HWY  
CARLSBAD NM, 88220  
Fax To:

Received: 06/18/2024  
Reported: 06/24/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO

Sampling Date: 06/14/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: SS 16 0.5' (H243574-16)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/21/2024	ND	1.96	98.1	2.00	3.97		
Toluene*	<0.050	0.050	06/21/2024	ND	1.93	96.5	2.00	2.31		
Ethylbenzene*	<0.050	0.050	06/21/2024	ND	1.97	98.6	2.00	0.0735		
Total Xylenes*	<0.150	0.150	06/21/2024	ND	5.83	97.2	6.00	0.0658		
Total BTEX	<0.300	0.300	06/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 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	16.0	16.0	06/20/2024	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	06/21/2024	ND	179	89.5	200	5.14	
DRO >C10-C28*	<10.0	10.0	06/21/2024	ND	173	86.6	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	06/21/2024	ND					

Surrogate: 1-Chlorooctane 78.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QM-07        The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND            Analyte NOT DETECTED at or above the reporting limit
- RPD          Relative Percent Difference
- \*\*            Samples not received at proper temperature of 6°C or below.
- \*\*\*          Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "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

1 of 2

[illegible]





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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 2

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: David McInnis dmclnnis@ensolum.com				P.O. #:															
Address: 3122 National Parks Hwy				Company: XTO Energy Inc.															
City: Carlsbad State: NM Zip: 88220				Attn: Amy Ruth															
Phone #: 337 257-8307 Fax #:				Address: 3104 E. Green St.															
Project #: 03C1558436 Project Owner: XTO				City: Carlsbad															
Project Name: Ross Draw 25-31 Battery				State: NM Zip: 88220															
Project Location:				Phone #:															
Sampler Name: Connor Whitman				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.	SAMPLING		BTEX	TPH	CHLORIDE				
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL				OTHER :	DATE	TIME	
H243574	SS11	0.5	G	1								✓		6-14-24	1325				
11	SS12														1330				
12	SS13														1335				
13	SS14														1340				
14	SS15														1345				
15	SS16														1350				
16																			
CW																			

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Relinquished By:	Date: 6-18-24 Time: 1418	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date:	Received By:	All Results are emailed. Please provide Email address: bbelill@ensolum.com, TMorrissey@ensolum.com, dmclnnis@ensolum.com
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C Corrected Temp. °C	Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No	REMARKS: Cost Center: 1056301001 Incident ID: PENDING
TURNAROUND TIME: AD 6-18-24 Thermometer ID: #113 Correction Factor: -0.5°C	Standard Rush 140	Bacteria (only) Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	Sample Condition Observed Temp. °C Corrected Temp. °C

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



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

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August 21, 2024

TRACY HILLARD

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: ROSS DRAW 25-31 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 08/15/24 13:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. 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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 01 1' (H244958-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTX	<0.300	0.300	08/17/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	227	113	200	3.61	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	216	108	200	6.73	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 90.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 02 1' (H244958-02)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	624	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	227	113	200	3.61	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	216	108	200	6.73	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 92.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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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: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 02A 1' (H244958-03)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEx	<0.300	0.300	08/17/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 88.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

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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: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 03 1' (H244958-04)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	08/19/2024	ND	416	104	400	7.41	

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 61.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.3 % 49.1-148

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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: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 04 1' (H244958-05)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	08/19/2024	ND	416	104	400	7.41	

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 81.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 05 1' (H244958-06)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 77.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.9 % 49.1-148

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\*=Accredited Analyte

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**Analytical Results For:**

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

Received: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 07 1' (H244958-07)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	11.1	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 70.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.3 % 49.1-148

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**Analytical Results For:**

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

Received: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 08 1' (H244958-08)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	416	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	<10.0	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 86.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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**Analytical Results For:**

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

Received: 08/15/2024  
Reported: 08/21/2024  
Project Name: ROSS DRAW 25-31 BATTERY  
Project Number: 03C1558436  
Project Location: XTO 32.019460-103.942720

Sampling Date: 08/08/2024  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Alyssa Parras

**Sample ID: BH 09 2' (H244958-09)**

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	08/17/2024	ND	2.12	106	2.00	2.67	
Toluene*	<0.050	0.050	08/17/2024	ND	2.14	107	2.00	3.11	
Ethylbenzene*	<0.050	0.050	08/17/2024	ND	2.13	107	2.00	3.82	
Total Xylenes*	<0.150	0.150	08/17/2024	ND	6.63	110	6.00	3.61	
Total BTEX	<0.300	0.300	08/17/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	928	16.0	08/19/2024	ND	416	104	400	7.41		

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	08/16/2024	ND	219	110	200	9.36	
DRO >C10-C28*	10.2	10.0	08/16/2024	ND	209	104	200	10.1	
EXT DRO >C28-C36	<10.0	10.0	08/16/2024	ND					

Surrogate: 1-Chlorooctane 84.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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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





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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: Tracy Hillard				P.O. #:															
Address: 3122 National Parks Hwy				Company: XTO Energy Inc.															
City: Carlsbad State: NM Zip: 88220				Attn: Amy Ruth															
Phone #: 575-937-3906 Fax #:				Address: 3104 E. Green St.															
Project #: 03C1558436 Project Owner: XTO				City: Carlsbad															
Project Name: Ross Draw 25-31 Battery				State: NM Zip: 88220															
Project Location: 32.019460, -103.942720				Phone #:															
Sampler Name: Jesse Dorman				Fax #:															
FOR LAB USE ONLY				MATRIX				PRESERV.				SAMPLING							
Lab I.D.	Sample I.D.	Sample Depth (feet)	(G)RAB OR (C)OMP. # CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	CHLORIDE		
H244958	Bho1	1'	G										8/8/24	1055					
1	Bho2	1'												1315					
2	Bho2A	2'												1320					
3	Bho3	1'												1345					
4	Bho4	1'												1405					
5	Bho5	1'												1430					
6	Bho5	1'												1440					
7	Bho7	1'												1500					
8	Bho8	1'												1520					
9	Bho5	2'																	
10	ADG1524																		

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Relinquished By:	Date: 8/15/24	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
	Time: 1:05		All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	THillard@ensolum.com TMorrissey@ensolum.com,
	Time:		REMARKS:
Delivered By: (Circle One)	Observed Temp. °C 3.9°C	Sample Condition Cool Intact	Cost Center: 1056301001 Incident ID: nAPP2419856452
Sampler - UPS - Bus - Other:	Corrected Temp. °C 3.3°C	Yes No	Turnaround Time: 8-15-24 Standard Rush
		Thermometer ID #443	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C
		Correction Factor 0.5°C - 0.4°C	Yes No
			Corrected Temp. °C

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

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

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

QUESTIONS

Action 382682

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	382682
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2419856452
Incident Name	NAPP2419856452 ROSS DRAW 25 #31 BATTERY @ 0
Incident Type	Release Other
Incident Status	Remediation Plan Received

Location of Release Source

Please answer all the questions in this group.

Site Name	Ross Draw 25 #31 Battery
Date Release Discovered	06/12/2024
Surface Owner	Federal

Incident Details

Please answer all the questions in this group.

Incident Type	Release Other
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

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.

Crude Oil Released (bbls) Details	Cause: Corrosion   Dump Line   Crude Oil   Released: 7 BBL   Recovered: 4 BBL   Lost: 3 BBL.
Produced Water Released (bbls) Details	Cause: Corrosion   Dump Line   Produced Water   Released: 83 BBL   Recovered: 56 BBL   Lost: 27 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
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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**District III**

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Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

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Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 2

Action 382682

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	382682
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
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.
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.	

**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: 09/11/2024
--	--

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Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 3

Action 382682

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	382682
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	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 500 and 1000 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 500 and 1000 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 100 (ft.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**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
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.	
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)	14000
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	11404
GRO+DRO	(EPA SW-846 Method 8015M)	9574
BTEX	(EPA SW-846 Method 8021B or 8260B)	0.1
Benzene	(EPA SW-846 Method 8021B or 8260B)	0.8

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	06/14/2024
On what date will (or did) the final sampling or liner inspection occur	11/24/2024
On what date will (or was) the remediation complete(d)	11/24/2024
What is the estimated surface area (in square feet) that will be reclaimed	24486
What is the estimated volume (in cubic yards) that will be reclaimed	1360
What is the estimated surface area (in square feet) that will be remediated	24486
What is the estimated volume (in cubic yards) that will be remediated	1360

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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**District IV**

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**Oil Conservation Division**  
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**Santa Fe, NM 87505**

QUESTIONS, Page 4

Action 382682

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	382682
	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 <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> 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: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 09/11/2024
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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 382682

QUESTIONS (continued)

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
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	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

<b>Deferral Requests Only</b>	
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.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 382682

**QUESTIONS (continued)**

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	382682
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	368796
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	08/08/2024
What was the (estimated) number of samples that were to be gathered	30
What was the sampling surface area in square feet	6000

**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 382682

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  382682
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
nvelez	The remediation plan is approved as written. Devon Energy has 90-days (January 2, 2025) to submit to OCD its appropriate or final remediation closure report.	10/4/2024