



August 19, 2024

New Mexico Oil Conservation Division

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

**Re: Remediation Work Plan
PLU 20 DTD 222H-223H
Incident Number NAPP2415057335
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* to document assessment and remediation activities completed to date and propose remedial actions to address impacted soil identified at the PLU 20 DTD 222H-223H (Site). The purpose of the Site delineation and excavation activities was to remove waste-containing soil resulting from a release of produced water at the Site. The following Work Plan proposes to excavate additional waste-containing soil within the release extent.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit N, Section 16, Township 24 South, Range 30 East, in Eddy County, New Mexico (32.2109425°, -103.8891928°) and is associated with oil and gas exploration and production operations on state land managed by the New Mexico State Land Office (NMSLO).

On May 20, 2024, damage to a flowline resulted in the release of 34 barrels (bbls) of produced water to the surrounding right-of-way (ROW) and pasture area. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 10 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via Notification of Release (NOR) and subsequently submitted an Initial C-141 Application (C-141) on May 29, 2024. The release was assigned Incident Number NAPP2415057335.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest groundwater well with depth to groundwater data is a New Mexico Office of the State Engineer (NMOSE) well, permitted as C-3893, located approximately 0.33 miles southeast of the Site. In August 2015, C-3893 was drilled to a total depth of 600 feet bgs. No groundwater was observed during drilling activities. The Well Record and Log is included in Appendix A and all wells used for depth to water determination are depicted on Figure 1.

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The closest continuously flowing or significant watercourse to the Site is a riverine, located approximately 3,510 feet north 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 (low potential karst designation area).

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

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

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet of the pasture area that was impacted by the release, 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 May 20, 2024, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the C-141 and visual observations. Fourteen delineation soil samples (SS01 through SS14) were collected at a depth 0.5 feet bgs. Delineation soil samples SS01 through SS04 were collected within the release extent and SS05 through SS14 were collected outside of the release extent. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed and a photographic log is included in Appendix B.

The delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following constituents of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following Standards Method SM4500.

On June 5, 2024, four boreholes (BH01 through BH04) were advanced via hand auger within the release extent at the approximate locations of SS01 through SS04, respectively. The boreholes were advanced to terminal depths ranging from 1 foot to 2 feet bgs. Discrete soil samples were collected from each borehole at depths ranging from 1 foot bgs to 2 feet bgs. Soil from the borehole was field screened for VOCs and chloride. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Appendix C. The soil sample locations are depicted on Figure 2. Photographic documentation was completed during the delineation activities and a photographic log is included in Appendix B. The delineation soil samples were collected, handled, and analyzed following the same procedures as described above.

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Laboratory analytical results for soil sample SS03 indicated chloride concentrations exceeded the reclamation requirement. Laboratory analytical results for all delineation soil samples collected at 0.5 feet bgs were in compliance with the Closure Criteria and reclamation requirement, successfully defining the lateral extent of the release. Laboratory analytical results for all delineation soil samples collected at depths ranging from 1 foot to 2 feet bgs were compliant with the Closure Criteria and reclamation requirement, successfully defining the vertical extent of the release. Based the laboratory analytical results, additional confirmation soil sampling and excavation of the area near SS03 was warranted.

CONFIRMATION SOIL SAMPLING AND EXCAVATION ACTIVITIES

On July 2, 2024, Ensolum personnel visited the Site to complete confirmation soil sampling of the release extent. Thirty 5-point composite confirmation soil samples were collected in areas that represented no more than 200 square feet of the release extent. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Confirmation soil samples CS01 through CS30 were collected at a depth of approximately 0.3 feet bgs within the release extent. The confirmation soil samples were field screened for VOCs and chloride and mapped utilizing a handheld GPS system. The confirmation soil sample locations are depicted on Figure 3. The soil samples were handled following the same procedure as described above and submitted to Cardinal in Hobbs, New Mexico.

Following a review of the laboratory analytical results for confirmation soil samples CS01 through CS30, Ensolum personnel returned to the Site to oversee excavation of waste-containing soil identified in the area of assessment soil sample SS03 as well as confirmation soil samples CS06, CS07, CS10, CS11, CS14, CS15, CS20 through CS22, CS29, and CS30.

Between July 18 and July 19, 2024, soil was excavated to the maximum extent possible (MEP) with hand shovels in the areas represented by delineation soil sample SS03 and confirmation soil samples CS10, CS14, and CS15, which contained chloride concentrations exceeding the reclamation requirement. The excavation occurred in an active pipeline ROW. Additional excavation via hand shovel was limited by refusal due to shallow competent caliche. To direct excavation activities, Ensolum personnel screened soil for VOCs and chlorides. Following the removal of impacted soil, 5-point composite excavation soil samples were collected as described above. Excavation soil samples FS01 through FS05 were collected from the floor of the excavation at a depth of 1 foot bgs. Excavation soil samples SW01 through SW03 were collected on the sidewall of the excavations at depths ranging from ground surface to 1 foot bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extents and confirmation soil sample locations are presented on Figure 3.

The total excavation areas measured approximately 970 square feet. A total of approximately 40 cubic yards of impacted soil was removed during excavation activities and was properly disposed of at the R360 Landfill Disposal Facility located in Hobbs, New Mexico.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for confirmation soil samples CS06, CS07, CS10, CS11, CS14, CS15, CS20 through CS22, CS29, and CS30 indicated chloride concentrations exceeded the reclamation requirement. Laboratory analytical results for all other confirmation soil samples indicated all COCs were compliant with the Closure Criteria and reclamation requirement.

Following the removal of waste containing soil in the areas of delineation soil sample SS03 and confirmation soil samples CS10, CS14 and CS15, laboratory analytical results for excavation soil

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samples FS01 through FS05, and SW01 through SW02 indicated all COC concentrations were in compliance with the Closure Criteria and reclamation requirement. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix D.

PROPOSED REMEDIATION WORK PLAN

While approximately 40 cubic yards of waste-containing soil were removed with hand shovels, laboratory analytical results for confirmation soil samples indicate soil containing elevated chloride concentrations still exists across a total of 1,500 square feet and extends to a maximum depth of 1-foot bgs. Removal of this waste-containing soil will require mechanical excavation. As such, XTO proposes to complete the following remediation activities:

- Excavation of waste containing soil to a depth of 1-foot bgs in the areas of confirmation soil samples CS06, CS07, CS11, CS20 through CS22, CS29, and CS30. Excavation will proceed laterally until sidewall soil samples confirm chloride concentrations are compliant with the reclamation requirement in the top four feet.
- The soil samples will be handled as described above and analyzed for all COCs.
- An estimated 55 cubic yards of waste-containing soil will be excavated. The excavated soil will be transferred to an approved landfill facility for disposal.
- XTO will submit a *Closure Request* detailing additional remediation activities completed.

PROPOSED RECLAMATION PLAN

- The excavation will be backfilled with locally sourced topsoil to match surrounding grade;
- One representative 5-point composite soil sample will be collected from the backfill material to confirm compliance with the NMOCD requirement for reclaimed areas to be non-waste containing. The representative backfill soil sample will be handled and analyzed following the same procedures as described above
- Following backfill activities the disturbed area will be contoured to match the surrounding topography and the surface will be prepared for seeding. XTO proposes to seed the area with a certified weed-free seed mix of the NMSLO Sandy Site Seed Mixture, below, at the rate specified in pounds of pure live seed (PLS) per acre;

Grasses	PLS/Acre
Sand bluestem	2.0
Little bluestem	3.0
Black grama	1.0
Sand dropseed	4.0
Plains bristlegrass	2.0
Forbs	PLS/Acre
Firewheel (Gaillardia)	1.0
Annual Sunflower	1.0
Shrubs	PLS/Acre
Fourwing Saltbrush	1.0

- The seed mix will be applied via drill seeding. Reclamation activities will be documented with photographs and will be timestamped with GPS data;

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- The Site will be monitored for vegetation growth and to ensure that reclamation activities are successful.

XTO will complete the excavation and soil sampling activities within 90 days of the date of approval of this *Work Plan* by the NMOCD.

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

Sincerely,
Ensolum, LLC

Mariaha O'Dell

Mariaha O'Dell
Staff Geologist

Ashley L. Ager

Ashley Ager, MS, PG
Principal, Geologist

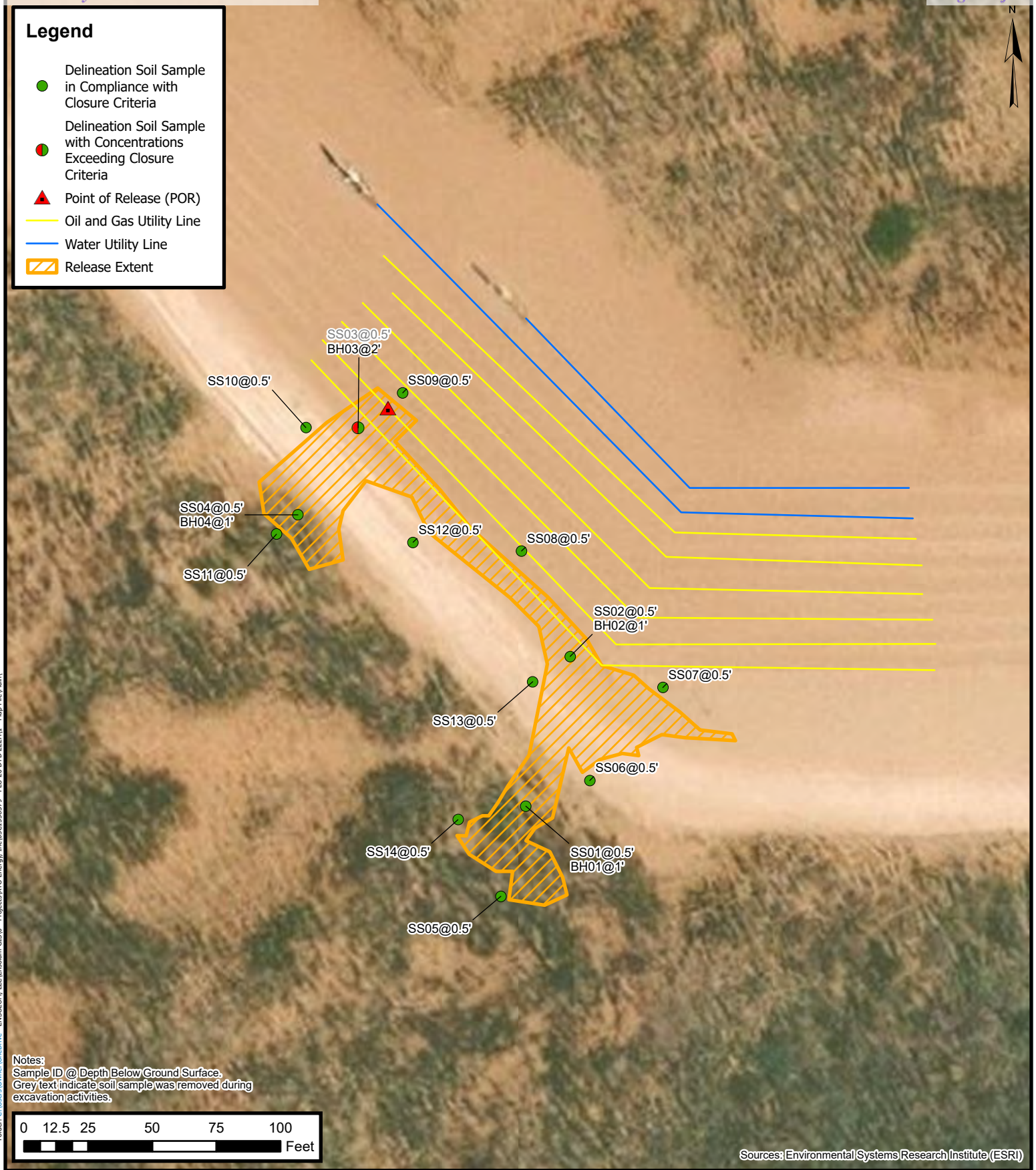
cc: Amy Ruth, XTO
Amanda Garcia, XTO
BLM

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Confirmation Soil Sample Locations
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



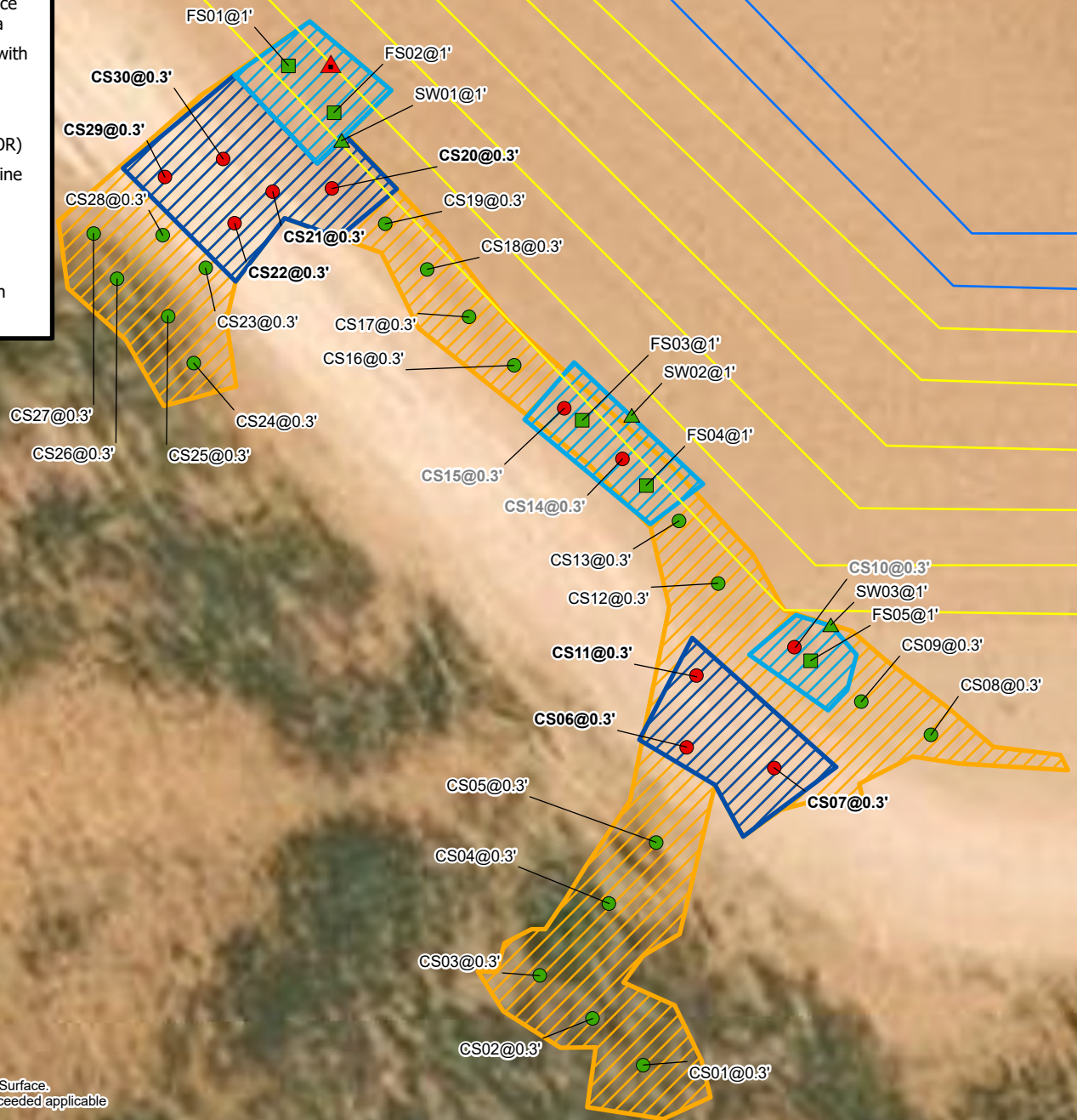
Delineation Soil Sample Locations

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FIGURE
2

Legend

- Confirmation Floor Sample in Compliance with Closure Criteria
- Composite Sample in Compliance with Closure Criteria
- ▲ Confirmation Sidewall Sample in Compliance with Closure Criteria
- Composite Sample with Concentrations Exceeding Closure Criteria
- ▲ Point of Release (POR)
- Oil and Gas Utility Line
- Water Utility Line
- Release Extent
- Excavation Extent
- Proposed excavation extent



Notes:
 Sample ID @ Depth Below Ground Surface.
 Samples in bold indicate sample exceeded applicable closure criteria.
 Grey text indicate soil sample was removed during excavation activities.

0 5 10 20 30 40
 Feet

Sources: Environmental Systems Research Institute (ESRI)

Confirmation Soil Sample Locations

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FIGURE

3





TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
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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	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
BH01	06/05/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
SS02	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
BH02	06/05/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
SS03	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	672
BH03	06/05/2024	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	368
SS04	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	384
BH04	06/05/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	336
SS05	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS06	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS07	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS08	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
SS09	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS10	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS11	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS12	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS13	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS14	05/20/2024	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
Confirmation Soil Samples										
CS01	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
CS02	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	432
CS03	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	304
CS04	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
CS05	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	384
CS06	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	10,700
CS07	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	3,120
CS08	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
CS09	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
CS10	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,550
CS11	07/02/2024	0.3	<0.050	<0.300	<10.0	45.9	44.6	<10.0	90.5	4,480
CS12	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	592
CS13	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	544
CS14	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	624



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 20 DTD 222H
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
CS15	07/02/2024	0-3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	832
CS16	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	176
CS17	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
CS18	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
CS19	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	368
CS20	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	720
CS21	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,020
CS22	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	736
CS23	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
CS24	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48
CS25	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	352
CS26	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
CS27	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
CS28	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	448
CS29	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,000
CS30	07/02/2024	0.3	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,170
Excavation Soil Samples										
FS01	07/19/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
FS02	07/19/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
FS03	07/19/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
FS04	07/19/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
FS05	07/19/2024	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
SW01	07/19/2024	0-1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	224
SW02	07/19/2024	0-1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SW03	07/19/2024	0-1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	176

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



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NUMBER (WELL NUMBER) PLU Lease CP Bed				OSE FILE NUMBER(S) C-3893			
	WELL OWNER NAME(S) BOPCO, L.P.				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 201 MAIN STREET				CITY FORT WORTH		STATE TX	
					ZIP 76102			
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 12	SECONDS 32.88	N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND		
	LONGITUDE 103	53	2.88	W	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SE 1/4 OF NW 1/4 OF NW 1/4 OF NE 1/4 OF SECTION 21, TOWNSHIP 24S, RANGE 30E								
2. DRILLING & CASING INFORMATION	LICENSE NUMBER WD-1261		NAME OF LICENSED DRILLER R. DARRELL CRASS			NAME OF WELL DRILLING COMPANY DARRELL CRASS DRILLING COMPANY		
	DRILLING STARTED 8/19/15		DRILLING ENDED 8/26/15		DEPTH OF COMPLETED WELL (FT) 600		BORE HOLE DEPTH (FT) 600	
							DEPTH WATER FIRST ENCOUNTERED (FT) N/A	
	COMPLETED WELL IS:		<input type="radio"/> ARTESIAN		<input checked="" type="radio"/> DRY HOLE		<input type="radio"/> SHALLOW (UNCONFINED)	
	DRILLING FLUID:		<input type="radio"/> AIR		<input checked="" type="radio"/> MUD		ADDITIVES - SPECIFY: SUPER GEL X	
	DRILLING METHOD:		<input checked="" type="radio"/> ROTARY		<input type="radio"/> HAMMER		<input type="radio"/> CABLE TOOL	
							OTHER - SPECIFY:	
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)		CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)		CASING CONNECTION TYPE	
	FROM	TO						
	0	40	8"		SCH 40 PVC BLANK		GLUE, SCREWS	
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)		LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL		AMOUNT (cubic feet)	
	FROM	TO						
	10	425	8"		BENTONITE HOLE PLUG		145 CUBIC FEET	
	0	10	8"		PORTLAND CEMENT		7 CUBIC FEET	

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	C-3893	POD NUMBER	1	TRN NUMBER	571438
LOCATION	24S-20E-21				

PAGE 1 OF 2

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WR-20 WELL RECORD & LOG (Version 06/08/2012)

Released to Imaging: 8/21/2024 10:19:40 AM



APPENDIX B

Photographic Log



Photographic Log

XTO Energy, Inc

PLU 20 DTD 222H-223H

Incident Number nAPP2415057335



Photograph: 1 Date: 5/20/2024
Description: Soil staining in release footprint
View: Southwest



Photograph: 2 Date: 5/20/2024
Description: Soil staining in release footprint
View: Southeast



Photograph: 3 Date: 6/05/2024
Description: Delineation activities BH01
View: Southeast



Photograph: 4 Date: 6/05/2024
Description: Delineation activities BH03
View: Northwest

**Photographic Log**

XTO Energy, Inc

PLU 20 DTD 222H-223H

Incident Number nAPP2415057335



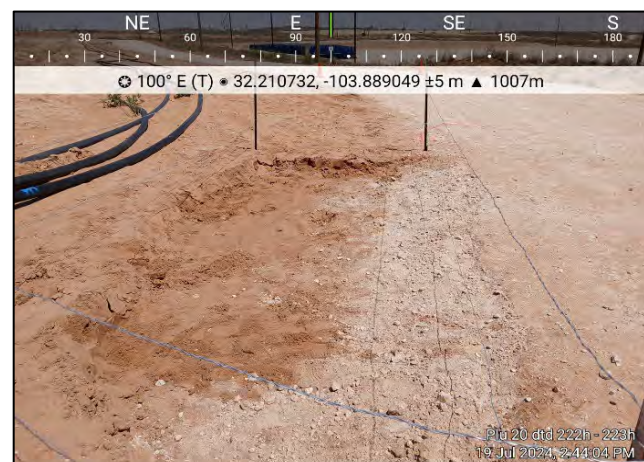
Photograph: 5 Date: 7/2/2024
 Description: Confirmation surface sampling
 View: Southwest



Photograph: 6 Date: 7/19/2024
 Description: Excavation activities
 View: East



Photograph: 7 Date: 7/19/2024
 Description: Excavation activities
 View: Southeast


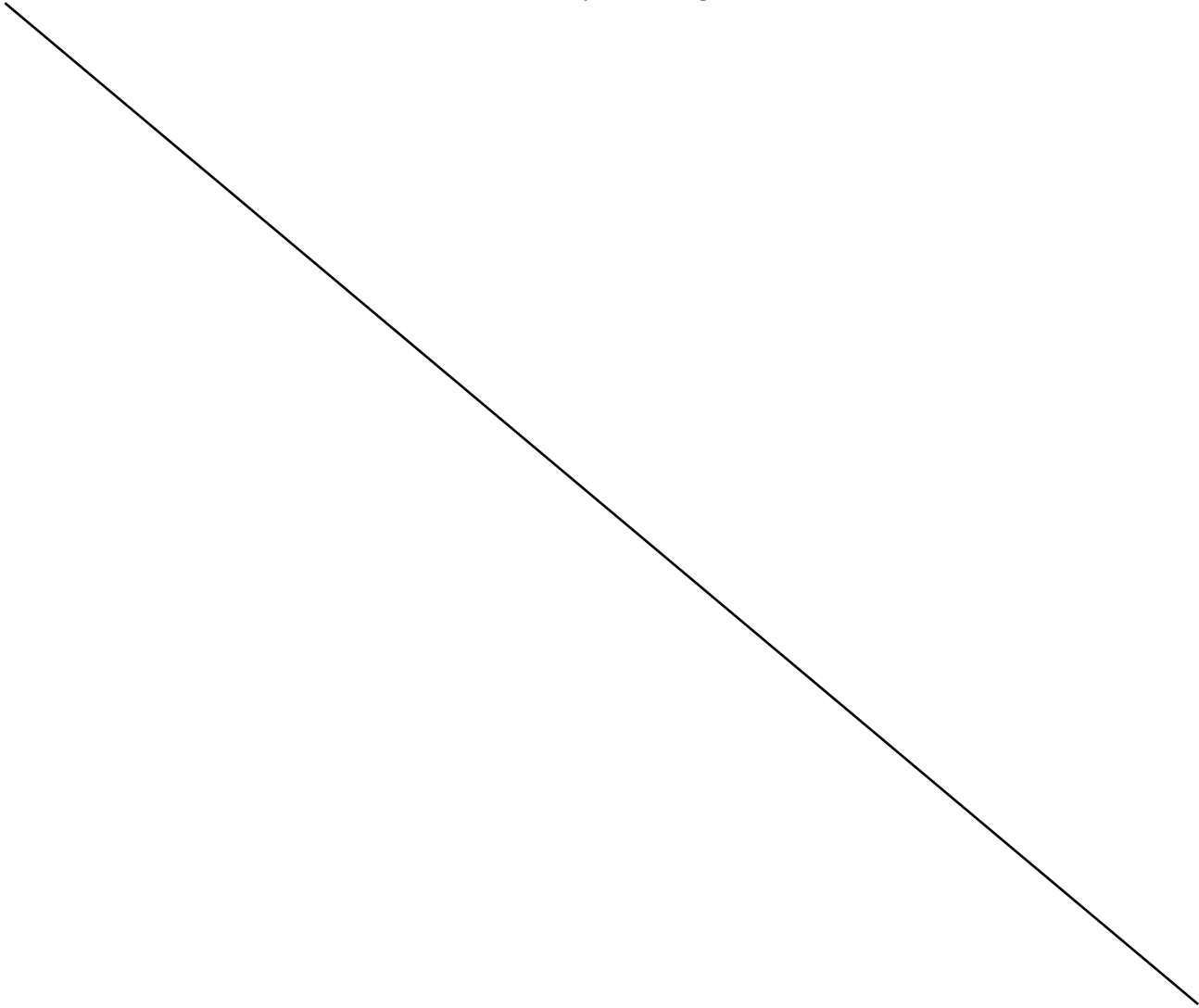



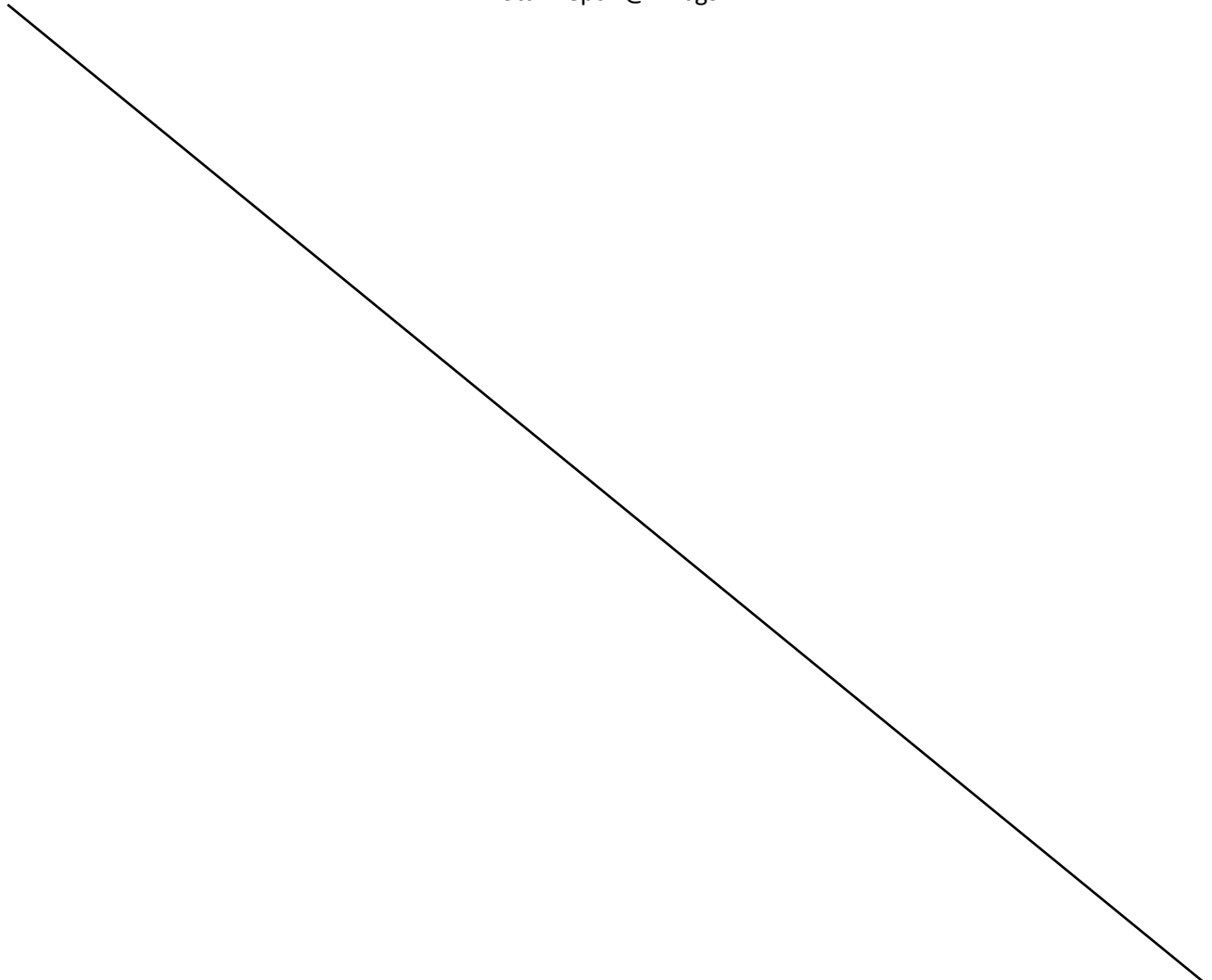
Photograph: 8 Date: 7/19/2024
 Description: Excavation activities
 View: East


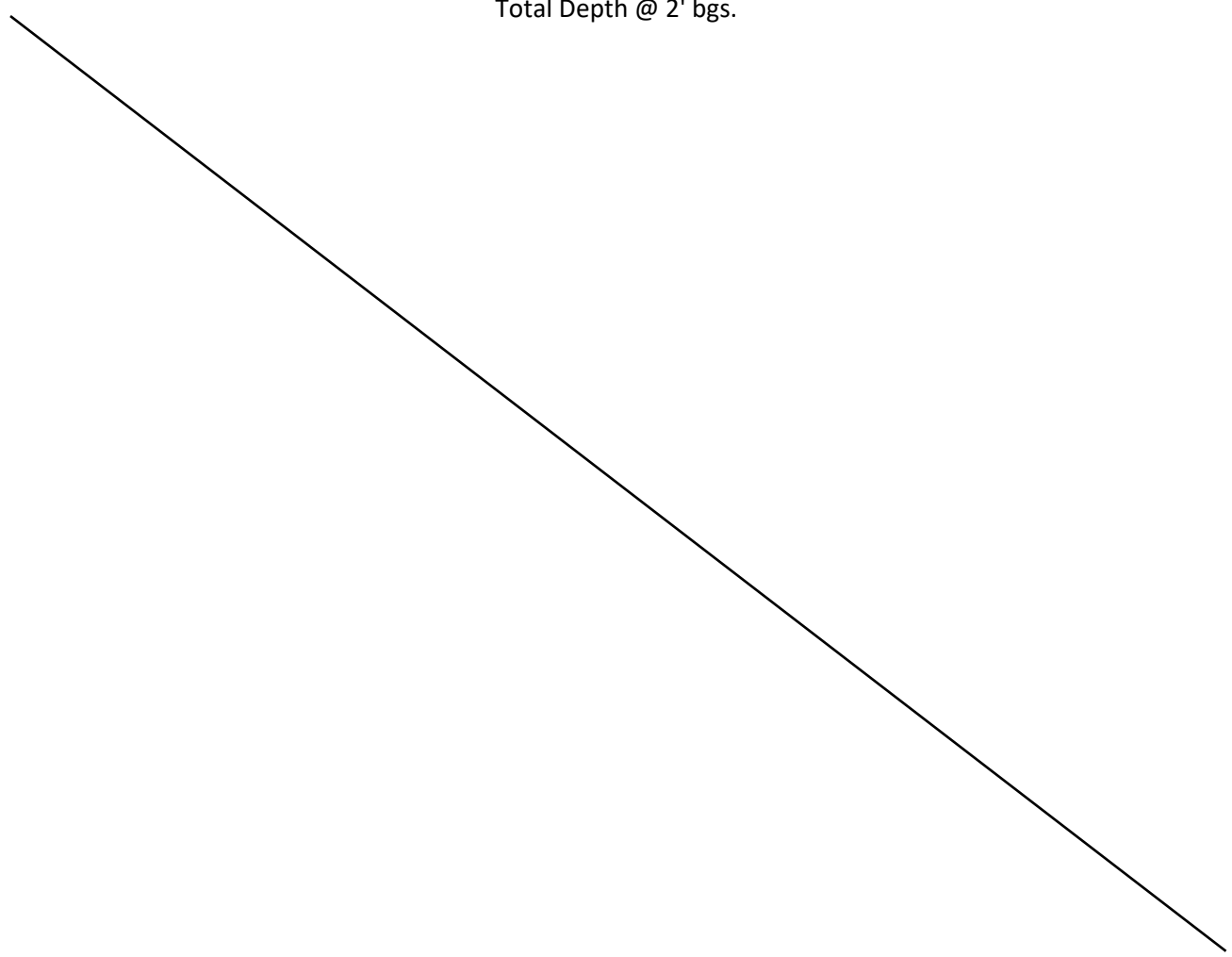



APPENDIX C

Lithologic Soil Sampling Logs

								Sample Name: BH01		Date: 6/5/2024					
								Site Name: PLU 20 DTD 222H							
								Incident Number: NAPP2415057335							
								Job Number: 03C1558379							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: M. O'Dell		Method: Hand Auger					
Coordinates: 32.210532, -103.889088								Hole Diameter: ~3.5"		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. All chloride measurements are calculated with a +40% correction factor.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
M	510	0	N	SS01	0.5	0	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, moist, no odor, no staining.							
D	280	0	N	BH01	1	1	SW	Sand. Reddish brown, very fine to fine grained, well graded, dry, no odor, no staining.							
Total Depth @ 1' bgs.															
															

					Sample Name: BH02		Date: 6/5/2024	
					Site Name: PLU 20 DTD 222H			
					Incident Number: NAPP2415057335			
					Job Number: 03C1558379			
LITHOLOGIC / SOIL SAMPLING LOG					Logged By: M. O'Dell		Method: Hand Auger	
Coordinates: 32.210692, -103.889030					Hole Diameter: ~3.5"		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. All chloride measurements are calculated with a +40% correction factor.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	314	0	N	SS02	0.5	0	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, moist, no odor, no staining.
D	325	0	N	BH02	1	1	SW	Sand. Reddish brown, very fine to fine grained, well graded, dry, no odor, no staining
Total Depth @ 1' bgs.								
								

								Sample Name: BH03		Date: 6/5/2024	
LITHOLOGIC / SOIL SAMPLING LOG								Site Name: PLU 20 DTD 222H			
								Incident Number: NAPP2415057335			
								Job Number: 03C1558379			
Coordinates: 32.210939, -103.889295								Logged By: M. O'Dell		Method: Hand Auger	
								Hole Diameter: ~3.5"		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. All chloride measurements are calculated with a +40% correction factor.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
M	918	0	N	SS03	0.5	0	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, moist, no odor, no staining.			
D	638	0	N		1	1	SW	Sand. Reddish brown, very fine to fine grained, well graded, dry, no odor, no staining.			
D	465	0	N	BH03	2	2					
Total Depth @ 2' bgs.											
											

								Sample Name: BH04		Date: 6/5/2024					
								Site Name: PLU 20 DTD 222H							
								Incident Number: NAPP2415057335							
								Job Number: 03C1558379							
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: M. O'Dell		Method: Hand Auger					
Coordinates: 32.210847, -103.889372								Hole Diameter: ~3.5"		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. All chloride measurements are calculated with a +40% correction factor.															
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions							
D	314	0	N	SS04	0.5	0	SP	Sand. Reddish brown, very fine to fine grained, poorly graded, moist, no odor, no staining.							
D	280	0	N	BH04	1	1	SW	Sand. Reddish brown, very fine to fine grained, well graded, dry, no odor, no staining.							
Total Depth @ 1' bgs.															



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



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

May 24, 2024

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 DTD 222H

Enclosed are the results of analyses for samples received by the laboratory on 05/20/24 16:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	05/20/2024	Sampling Date:	05/20/2024
Reported:	05/24/2024	Sampling Type:	Soil
Project Name:	PLU 20 DTD 222H	Sampling Condition:	Cool & Intact
Project Number:	03C1558379	Sample Received By:	Alyssa Parras
Project Location:	XTO 32.2109425, -103.8891928		

Sample ID: SS 05 0.5' (H242769-01)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89	
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15	
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06	
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31	
Total BTEX	<0.300	0.300	05/21/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 93.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.3 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 06 0.5' (H242769-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEX	<0.300	0.300	05/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 93.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.0 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 07 0.5' (H242769-03)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEx	<0.300	0.300	05/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 97.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 08 0.5' (H242769-04)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEx	<0.300	0.300	05/21/2024	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	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 09 0.5' (H242769-05)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEx	<0.300	0.300	05/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	48.0	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 119 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 10 0.5' (H242769-06)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEX	<0.300	0.300	05/21/2024	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	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.1 % 49.1-148

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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 11 0.5' (H242769-07)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEx	<0.300	0.300	05/21/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	48.0	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.7 % 49.1-148

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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 12 0.5' (H242769-08)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89	
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15	
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06	
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31	
Total BTEX	<0.300	0.300	05/21/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.9 % 49.1-148

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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 13 0.5' (H242769-09)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/21/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/21/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/21/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/21/2024	ND	6.48	108	6.00	5.31		
Total BTEx	<0.300	0.300	05/21/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.5 % 49.1-148

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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS 14 0.5' (H242769-10)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	05/22/2024	ND	1.83	91.3	2.00	2.89		
Toluene*	<0.050	0.050	05/22/2024	ND	1.84	92.1	2.00	1.15		
Ethylbenzene*	<0.050	0.050	05/22/2024	ND	1.90	95.2	2.00	3.06		
Total Xylenes*	<0.150	0.150	05/22/2024	ND	6.48	108	6.00	5.31		
Total BTEX	<0.300	0.300	05/22/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS01 0.5' (H242769-11)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/22/2024	ND	1.83	91.3	2.00	2.89	
Toluene*	<0.050	0.050	05/22/2024	ND	1.84	92.1	2.00	1.15	
Ethylbenzene*	<0.050	0.050	05/22/2024	ND	1.90	95.2	2.00	3.06	
Total Xylenes*	<0.150	0.150	05/22/2024	ND	6.48	108	6.00	5.31	
Total BTEx	<0.300	0.300	05/22/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.2 % 49.1-148

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Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS02 0.5' (H242769-12)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/22/2024	ND	1.83	91.3	2.00	2.89	
Toluene*	<0.050	0.050	05/22/2024	ND	1.84	92.1	2.00	1.15	
Ethylbenzene*	<0.050	0.050	05/22/2024	ND	1.90	95.2	2.00	3.06	
Total Xylenes*	<0.150	0.150	05/22/2024	ND	6.48	108	6.00	5.31	
Total BTEx	<0.300	0.300	05/22/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS03 0.5' (H242769-13)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/22/2024	ND	1.83	91.3	2.00	2.89	
Toluene*	<0.050	0.050	05/22/2024	ND	1.84	92.1	2.00	1.15	
Ethylbenzene*	<0.050	0.050	05/22/2024	ND	1.90	95.2	2.00	3.06	
Total Xylenes*	<0.150	0.150	05/22/2024	ND	6.48	108	6.00	5.31	
Total BTEx	<0.300	0.300	05/22/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	672	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.8 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/20/2024
Reported: 05/24/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 05/20/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Alyssa Parras

Sample ID: SS04 0.5' (H242769-14)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/22/2024	ND	1.83	91.3	2.00	2.89	
Toluene*	<0.050	0.050	05/22/2024	ND	1.84	92.1	2.00	1.15	
Ethylbenzene*	<0.050	0.050	05/22/2024	ND	1.90	95.2	2.00	3.06	
Total Xylenes*	<0.150	0.150	05/22/2024	ND	6.48	108	6.00	5.31	
Total BTEx	<0.300	0.300	05/22/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	05/21/2024	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	05/21/2024	ND	185	92.3	200	0.522	
DRO >C10-C28*	<10.0	10.0	05/21/2024	ND	178	89.2	200	0.113	
EXT DRO >C28-C36	<10.0	10.0	05/21/2024	ND					

Surrogate: 1-Chlorooctane 99.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 83.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

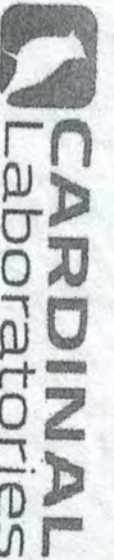
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A handwritten signature in black ink, appearing to read "Caley D. Keene".

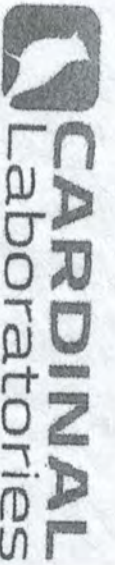
Caley D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC		P.O. #:		BILL TO		ANALYSIS REQUEST	
Project Manager: Tacoma Morrissey		Address: 3122 National Parks Hwy		City: Carlsbad		State: NM Zip: 88220	
Phone #: 0361558379		Fax #:		Company: XTO Energy		Attn: Amy Ruth	
Project #: 3371257-8307		Project Owner:		Address: 3104 E. Greene St		City: Carlsbad	
Project Name: PLU 20 DTD 222H		State: NM Zip: 88220		Phone #:		Fax #:	
Project Location: 32.2109425, -103.8891928		Sampler Name: Mariaba O'Dell		DATE		TIME	
FOR LAB USE ONLY		Depth (feet)		DATE		TIME	
Lab I.D.		Sample I.D.		DATE		TIME	
Hatched 9		SS05		5/20/24		12:25	
SS06		SS07		12:30		12:35	
SS08		SS09		12:40		12:45	
SS10		SS11		12:50		12:55	
SS12		SS13		13:00		13:05	
SS14		SS15		13:10		13:15	
Depth (feet)		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX	
0.5'		1		GROUNDWATER		WASTEWATER	
X		X		SOIL		OIL	
X		X		SLUDGE		OTHER :	
X		X		ACID/BASE:		ICE / COOL	
X		X		OTHER :		DATE	
X		X		DATE		TIME	
X		X		12:25		12:30	
X		X		12:35		12:40	
X		X		12:45		12:50	
X		X		12:55		13:00	
X		X		13:05		13:10	
X		X		13:15		13:20	
X		X		13:25		13:30	
X		X		13:35		13:40	
X		X		13:45		13:50	
X		X		13:55		14:00	
X		X		14:05		14:10	
X		X		14:15		14:20	
X		X		14:25		14:30	
X		X		14:35		14:40	
X		X		14:45		14:50	
X		X		14:55		15:00	
X		X		15:05		15:10	
X		X		15:15		15:20	
X		X		15:25		15:30	
X		X		15:35		15:40	
X		X		15:45		15:50	
X		X		15:55		16:00	
X		X		16:05		16:10	
X		X		16:15		16:20	
X		X		16:25		16:30	
X		X		16:35		16:40	
X		X		16:45		16:50	
X		X		16:55		17:00	
X		X		17:05		17:10	
X		X		17:15		17:20	
X		X		17:25		17:30	
X		X		17:35		17:40	
X		X		17:45		17:50	
X		X		17:55		18:00	
X		X		18:05		18:10	
X		X		18:15		18:20	
X		X		18:25		18:30	
X		X		18:35		18:40	
X		X		18:45		18:50	
X		X		18:55		19:00	
X		X		19:05		19:10	
X		X		19:15		19:20	
X		X		19:25		19:30	
X		X		19:35		19:40	
X		X		19:45		19:50	
X		X		19:55		20:00	
X		X		20:05		20:10	
X		X		20:15		20:20	
X		X		20:25		20:30	
X		X		20:35		20:40	
X		X		20:45		20:50	
X		X		20:55		21:00	
X		X		21:05		21:10	
X		X		21:15		21:20	
X		X		21:25		21:30	
X		X		21:35		21:40	
X		X		21:45		21:50	
X		X		21:55		22:00	
X		X		22:05		22:10	
X		X		22:15		22:20	
X		X		22:25		22:30	
X		X		22:35		22:40	
X		X		22:45		22:50	
X		X		22:55		23:00	
X		X		23:05		23:10	
X		X		23:15		23:20	
X		X		23:25		23:30	
X		X		23:35		23:40	
X		X		23:45		23:50	
X		X		23:55		00:00	
X		X		00:05		00:10	
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X		X		02:15		02:20	
X		X		02:25		02:30	
X		X		02:35		02:40	
X		X		02:45		02:50	
X		X		02:55		03:00	
X		X		03:05		03:10	
X		X		03:15		03:20	
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X		X		08:15		08:20	
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X		X		09:15		09:20	
X		X		09:25		09:30	
X		X		09:35		09:40	
X		X		09:45		09:50	
X		X		09:55		10:00	
X		X		10:05		10:10	
X		X		10:15		10:20	
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X		X		11:25		11:30	
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X		X		01:55		02:00	
X		X		02:05		02:10	
X		X		02:15		02:20	
X		X		02:25		02:30	



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC

Project Manager: Tacoma Morrissey

Address: 3122 National Parks Hwy

City: Carlsbad

State: NM Zip: 88220

Phone #: 337-257-8307 Fax #:

Project #: 03C1558379 Project Owner:

Project Name: PLU 20 DTD 222H

Project Location: 32.2109425, -103.8891928

Sampler Name: Mahana O'Dell

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: XTO Energy

Attn: Amy Ruth

Address: 3104 E. Greene St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

FOR LAB USE ONLY

Lab I.D. Sample I.D.

Depth (feet)

112471089

75/20/24

SS01
SS02
SS03
SS04

0.5'

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

13:40

13:45

13:50

13:55

Chlorides

TPH

BTEX

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Relinquished By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Relinquished By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Relinquished By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Relinquished By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Relinquished By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Relinquished By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:

Date: 5/20/24

Time: 10:44

Received By:



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

June 11, 2024

TACOMA MORRISSEY

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 DTD 222H

Enclosed are the results of analyses for samples received by the laboratory on 06/05/24 14:49.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	06/05/2024	Sampling Date:	06/05/2024
Reported:	06/11/2024	Sampling Type:	Soil
Project Name:	PLU 20 DTD 222H	Sampling Condition:	Cool & Intact
Project Number:	03C1558379	Sample Received By:	Shalyn Rodriguez
Project Location:	XTO 32.2109425, -103.8891928		

Sample ID: BH 01 1' (H243203-01)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/07/2024	ND	1.88	94.0	2.00	8.16	
Toluene*	<0.050	0.050	06/07/2024	ND	1.98	99.0	2.00	9.03	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.00	100	2.00	9.96	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.23	104	6.00	8.62	
Total BTEX	<0.300	0.300	06/07/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	06/07/2024	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	06/06/2024	ND	193	96.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	214	107	200	0.944	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 06/05/2024
Reported: 06/11/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 06/05/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: BH 02 1' (H243203-02)

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	06/07/2024	ND	1.70	85.0	2.00	4.80	
Toluene*	<0.050	0.050	06/07/2024	ND	1.91	95.4	2.00	4.35	
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.08	104	2.00	9.39	
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.32	105	6.00	10.1	
Total BTEX	<0.300	0.300	06/07/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 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	272	16.0	06/07/2024	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	06/06/2024	ND	193	96.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	214	107	200	0.944	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 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
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 06/05/2024
Reported: 06/11/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 06/05/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: BH 03 2' (H243203-03)

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	06/07/2024	ND	1.70	85.0	2.00	4.80		
Toluene*	<0.050	0.050	06/07/2024	ND	1.91	95.4	2.00	4.35		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.08	104	2.00	9.39		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.32	105	6.00	10.1		
Total BTEx	<0.300	0.300	06/07/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	368	16.0	06/07/2024	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	06/06/2024	ND	193	96.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	214	107	200	0.944	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 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
TACOMA MORRISSEY
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 06/05/2024
Reported: 06/11/2024
Project Name: PLU 20 DTD 222H
Project Number: 03C1558379
Project Location: XTO 32.2109425, -103.8891928

Sampling Date: 06/05/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: BH 04 1' (H243203-04)

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	06/07/2024	ND	1.70	85.0	2.00	4.80		
Toluene*	<0.050	0.050	06/07/2024	ND	1.91	95.4	2.00	4.35		
Ethylbenzene*	<0.050	0.050	06/07/2024	ND	2.08	104	2.00	9.39		
Total Xylenes*	<0.150	0.150	06/07/2024	ND	6.32	105	6.00	10.1		
Total BTEx	<0.300	0.300	06/07/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	336	16.0	06/07/2024	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	06/06/2024	ND	193	96.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/06/2024	ND	214	107	200	0.944	
EXT DRO >C28-C36	<10.0	10.0	06/06/2024	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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

Notes and Definitions

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

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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

[illegible]



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

July 10, 2024

BEN BELILL

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 DTD 222H-223H

Enclosed are the results of analyses for samples received by the laboratory on 07/02/24 16:31.

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.

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
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 01 0.3' (H243991-01)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/08/2024	ND	1.90	95.2	2.00	8.06		
Toluene*	<0.050	0.050	07/08/2024	ND	1.85	92.5	2.00	8.86		
Ethylbenzene*	<0.050	0.050	07/08/2024	ND	1.88	94.1	2.00	9.10		
Total Xylenes*	<0.150	0.150	07/08/2024	ND	5.66	94.3	6.00	8.81		
Total BTEX	<0.300	0.300	07/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 85.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.5 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 02 0.3' (H243991-02)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/08/2024	ND	1.90	95.2	2.00	8.06		
Toluene*	<0.050	0.050	07/08/2024	ND	1.85	92.5	2.00	8.86		
Ethylbenzene*	<0.050	0.050	07/08/2024	ND	1.88	94.1	2.00	9.10		
Total Xylenes*	<0.150	0.150	07/08/2024	ND	5.66	94.3	6.00	8.81		
Total BTEx	<0.300	0.300	07/08/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 97.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.4 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 03 0.3' (H243991-03)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/08/2024	ND	1.90	95.2	2.00	8.06		
Toluene*	<0.050	0.050	07/08/2024	ND	1.85	92.5	2.00	8.86		
Ethylbenzene*	<0.050	0.050	07/08/2024	ND	1.88	94.1	2.00	9.10		
Total Xylenes*	<0.150	0.150	07/08/2024	ND	5.66	94.3	6.00	8.81		
Total BTEx	<0.300	0.300	07/08/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	304	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 93.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.3 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 04 0.3' (H243991-04)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 124 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 92.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 05 0.3' (H243991-05)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 93.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.4 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 06 0.3' (H243991-06)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10700	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 82.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.4 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 07 0.3' (H243991-07)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15	
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37	
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38	
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48	
Total BTEX	<0.300	0.300	07/09/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3120	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 90.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 08 0.3' (H243991-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15	
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37	
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38	
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48	
Total BTEX	<0.300	0.300	07/09/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 97.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.7 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 09 0.3' (H243991-09)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	512	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 88.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.1 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 10 0.3' (H243991-10)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEx	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1550	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 97.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.3 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 11 0.3' (H243991-11)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4480	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	45.9	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	44.6	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 77.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.7 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 12 0.3' (H243991-12)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 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
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 13 0.3' (H243991-13)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	544	16.0	07/08/2024	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 87.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 14 0.3' (H243991-14)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEx	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	624	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 82.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 15 0.3' (H243991-15)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEx	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	832	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 96.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 16 0.3' (H243991-16)

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	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 98.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.7 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 17 0.3' (H243991-17)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15	
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37	
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38	
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48	
Total BTEX	<0.300	0.300	07/09/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 126 % 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	272	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 93.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.5 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 18 0.3' (H243991-18)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 122 % 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	288	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 86.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.1 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 19 0.3' (H243991-19)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	178	89.2	200	5.16	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	175	87.7	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 86.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.1 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 20 0.3' (H243991-20)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15	
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37	
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38	
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48	
Total BTEx	<0.300	0.300	07/09/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	720	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 87.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.0 % 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
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 21 0.3' (H243991-21)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15	
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37	
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38	
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48	
Total BTEx	<0.300	0.300	07/09/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 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	1020	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 84.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 88.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 22 0.3' (H243991-22)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15	
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37	
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38	
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48	
Total BTEX	<0.300	0.300	07/09/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	736	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 82.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 23 0.3' (H243991-23)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	2.10	105	2.00	8.15		
Toluene*	<0.050	0.050	07/09/2024	ND	2.21	110	2.00	7.37		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.27	113	2.00	7.38		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	7.00	117	6.00	7.48		
Total BTEX	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	112	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 95.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 24 0.3' (H243991-24)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEX	<0.300	0.300	07/09/2024	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 90.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 25 0.3' (H243991-25)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEx	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 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	352	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 91.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.4 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 26 0.3' (H243991-26)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEx	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	400	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 90.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.1 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 27 0.3' (H243991-27)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEX	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	512	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 91.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.2 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 28 0.3' (H243991-28)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEx	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	448	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 93.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Analytical Results For:

ENSOLUM
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 29 0.3' (H243991-29)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEX	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	2000	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 86.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.8 % 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
BEN BELILL
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/02/2024
Reported: 07/10/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/02/2024
Sampling Type: Soil
Sampling Condition: *** (See Notes)
Sample Received By: Shalyn Rodriguez

Sample ID: CS 30 0.3' (H243991-30)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	3.83		
Toluene*	<0.050	0.050	07/09/2024	ND	1.95	97.3	2.00	4.82		
Ethylbenzene*	<0.050	0.050	07/09/2024	ND	2.00	100	2.00	5.88		
Total Xylenes*	<0.150	0.150	07/09/2024	ND	5.91	98.5	6.00	6.04		
Total BTEx	<0.300	0.300	07/09/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	1170	16.0	07/08/2024	ND	400	100	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	07/08/2024	ND	193	96.6	200	3.07	
DRO >C10-C28*	<10.0	10.0	07/08/2024	ND	199	99.4	200	6.97	
EXT DRO >C28-C36	<10.0	10.0	07/08/2024	ND					

Surrogate: 1-Chlorooctane 83.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.5 % 49.1-148

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Notes and Definitions

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

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 3

Page 33 of 35



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 of 3

Company Name: Ensolum, LLC						BILL TO						ANALYSIS REQUEST					
Project Manager: Ben Bellil						P.O. #:											
Address: 3122 National Parks Hwy						Company: XTO Energy Inc.											
City: Carlsbad						Attn: Amy Ruth											
State: NM Zip: 88220						Address: 3104 E Green St											
Phone #: 989 854 0852 Fax #:						City: Carlsbad											
Project #: 03C1558379 Project Owner: XTO						State: NM Zip: 88220											
Project Location: 32.210943 -103.889193						Phone #:											
Sampler Name: Joshua Bailey						Fax #:											
FOR LAB USE ONLY																	
Lab I.D.		Sample I.D.		Depth (feet)		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV		SAMPLING			
										GROUNDWATER							
										WASTEWATER							
										SOIL							
										OIL							
										SLUDGE							
										OTHER :							
										ACID/BASE:							
										ICE / COOL							
										OTHER :							
										DATE		TIME					
H2435H	CS11	0.5-0.3	C	J	X	7/7/24	1235	X	Chlorides	X	TPH	X	BTEX				
12	CS12						1230	X									
13	CS13						1221	X									
14	CS14						1224	X									
15	CS15						1220	X									
16	CS16						1215	X									
17	CS17						1210	X									
18	CS18						1206	X									
19	CS19						1202	X									
20	CS20	0.5-0.3	C	J	X	7/7/24	1200	X									
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Relinquished By: [Signature]						Received By: [Signature]						Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:					
Time: 10:31						Date: 7/24/24						All Results are emailed. Please provide Email address: BBellil@ensolum.com, TMorrissey@ensolum.com					
Relinquished By: [Signature]						Received By: [Signature]						REMARKS: Incident: NAPP2415057335 Cost Center: 2266531001					
Delivered By: (Circle One) Sampler - UPS - Bus - Other:						Observed Temp.: 8.5°C Corrected Temp.: °C						Turnaround Time: Standard Rush Thermometer ID #115 #140 Correction Factor: 0.0°C					
						Sample Condition Cool Intact <input checked="" type="checkbox"/> Cool Intact <input checked="" type="checkbox"/>						Bacteria (only) Sample Condition Cool Intact <input checked="" type="checkbox"/> Cool Intact <input checked="" type="checkbox"/>					
						CHECKED BY: [Signature] (Initials)						Corrected Temp.: °C					



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 3 of 5

Company Name: Ensolum, LLC

Project Manager: Ben Beilli

Address: 3122 National Parks Hwy

City: Carlsbad

Phone #: 989 854 0852

Project #: 03C1558379

Project Name: PLU 20 DTD 222H-223H

Project Location: 32.210943 -103.889193

Sampler Name: Joshua Boxley

BILL TO

P.O. #:

Company: XTO Energy Inc.

Attn: Amy Ruth

Address: 3104 E Green St

City: Carlsbad

State: NM Zip: 88220

Phone #:

Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

Depth (feet)

Handwritten Lab I.D. and Sample I.D. numbers

Handwritten Sample I.D. numbers

Handwritten Depth (feet) values

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

Handwritten dates and times

Handwritten times

Handwritten times

Handwritten times

Handwritten times

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Received By:

Date:

Time:

Received By:

Date:

Time:

Received By:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Observed Temp. °C

Corrected Temp. °C

Sample Condition

Cool Impact

CHECKED BY:

(Initials)

Turnaround Time:

Thermometer ID

Standard

Rush

Bacteria (only)

Cool Impact

Sample Condition

Observed Temp. °C

Corrected Temp. °C

Observed Temp. °C

Corrected Temp. °C

Observed Temp. °C

Corrected Temp. °C

Observed Temp. °C

Corrected Temp. °C

Observed 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

July 26, 2024

DAVID MCINNIS

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: PLU 20 DTD 222H-223H

Enclosed are the results of analyses for samples received by the laboratory on 07/23/24 12:50.

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.

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

Received: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: FS01 1' (H244369-01)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	0.0556	
Toluene*	<0.050	0.050	07/23/2024	ND	1.94	97.2	2.00	0.874	
Ethylbenzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	1.56	
Total Xylenes*	<0.150	0.150	07/23/2024	ND	5.90	98.3	6.00	1.63	
Total BTEX	<0.300	0.300	07/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/24/2024	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2024	ND	196	97.8	200	9.42	
DRO >C10-C28*	<10.0	10.0	07/24/2024	ND	195	97.4	200	9.98	
EXT DRO >C28-C36	<10.0	10.0	07/24/2024	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Analytical Results For:

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

Received: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: FS02 1' (H244369-02)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	0.0556		
Toluene*	<0.050	0.050	07/23/2024	ND	1.94	97.2	2.00	0.874		
Ethylbenzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	1.56		
Total Xylenes*	<0.150	0.150	07/23/2024	ND	5.90	98.3	6.00	1.63		
Total BTEX	<0.300	0.300	07/23/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/24/2024	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/24/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/24/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 128 % 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: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: FS03 1' (H244369-03)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	0.0556		
Toluene*	<0.050	0.050	07/23/2024	ND	1.94	97.2	2.00	0.874		
Ethylbenzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	1.56		
Total Xylenes*	<0.150	0.150	07/23/2024	ND	5.90	98.3	6.00	1.63		
Total BTEX	<0.300	0.300	07/23/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	07/24/2024	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/24/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/24/2024	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 148 % 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: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: FS04 1' (H244369-04)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	0.0556		
Toluene*	<0.050	0.050	07/23/2024	ND	1.94	97.2	2.00	0.874		
Ethylbenzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	1.56		
Total Xylenes*	<0.150	0.150	07/23/2024	ND	5.90	98.3	6.00	1.63		
Total BTEX	<0.300	0.300	07/23/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/24/2024	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/25/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/25/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 130 % 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: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: FS05 1' (H244369-05)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	0.0556	
Toluene*	<0.050	0.050	07/23/2024	ND	1.94	97.2	2.00	0.874	
Ethylbenzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	1.56	
Total Xylenes*	<0.150	0.150	07/23/2024	ND	5.90	98.3	6.00	1.63	
Total BTEX	<0.300	0.300	07/23/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	07/24/2024	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/25/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/25/2024	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

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Analytical Results For:

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

Received: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SW01 0-1' (H244369-06)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	0.0556		
Toluene*	<0.050	0.050	07/23/2024	ND	1.94	97.2	2.00	0.874		
Ethylbenzene*	<0.050	0.050	07/23/2024	ND	2.00	100	2.00	1.56		
Total Xylenes*	<0.150	0.150	07/23/2024	ND	5.90	98.3	6.00	1.63		
Total BTEX	<0.300	0.300	07/23/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	07/24/2024	ND	448	112	400	3.51		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/25/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/25/2024	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 129 % 49.1-148

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Analytical Results For:

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

Received: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SW02 0-1' (H244369-07)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/24/2024	ND	1.99	99.5	2.00	4.09		
Toluene*	<0.050	0.050	07/24/2024	ND	1.96	97.9	2.00	4.00		
Ethylbenzene*	<0.050	0.050	07/24/2024	ND	1.98	99.2	2.00	4.19		
Total Xylenes*	<0.150	0.150	07/24/2024	ND	5.87	97.9	6.00	3.87		
Total BTEx	<0.300	0.300	07/24/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/24/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/25/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/25/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 131 % 49.1-148

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Analytical Results For:

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

Received: 07/23/2024
Reported: 07/26/2024
Project Name: PLU 20 DTD 222H-223H
Project Number: 03C1558379
Project Location: XTO 32.210943-103.889193

Sampling Date: 07/19/2024
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: SW03 0-1' (H244369-08)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/24/2024	ND	1.99	99.5	2.00	4.09		
Toluene*	<0.050	0.050	07/24/2024	ND	1.96	97.9	2.00	4.00		
Ethylbenzene*	<0.050	0.050	07/24/2024	ND	1.98	99.2	2.00	4.19		
Total Xylenes*	<0.150	0.150	07/24/2024	ND	5.87	97.9	6.00	3.87		
Total BTEx	<0.300	0.300	07/24/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 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	176	16.0	07/24/2024	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/25/2024	ND	212	106	200	2.44	
DRO >C10-C28*	<10.0	10.0	07/25/2024	ND	180	90.2	200	1.48	
EXT DRO >C28-C36	<10.0	10.0	07/25/2024	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 135 % 49.1-148

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Notes and Definitions

- S-05 The surrogate recovery is outside of lab established statistical control limits but still within method limits. Data is not adversely affected.
- 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 "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC Project Manager: David McInnis Address: 3122 National Parks Hwy City: Carlsbad State: NM Zip: 88220 Phone #: 337 257-8307 Fax #: Project #: : 03C1558379 Project Owner: XTO Project Name: PLU 20 DTD 222H - 223H Project Location: Sampler Name: Jesse Dorman		BILL TO P.O. #: Company: XTO Energy Inc. Attn: Amy Ruth Address: 3104 E. Green St. City: Carlsbad State: NM Zip: 88220 Phone #: Fax #:		ANALYSIS REQUEST						
Lab I.D. H2443049 1 2 3 4 5 6 7 8	Sample I.D. FS01 FS02 FS03 FS04 FS05 SW01 SW02 SW03	Sample Depth (feet) 1' 1' 1' 1' 1' 0.1' 1' 1'	(G)RAB OR (C)OMP. C C C C C C C C	# CONTAINERS 1 1 1 1 1 1 1 1	MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:	PRESERV ACID/BASE: ICE / COOL OTHER:	SAMPLING DATE TIME 7/19/24 09:40 09:45 11:10 11:10 12:30 10:00 11:15 14:00	BTEX TPH CHLORIDE	SD	(Diagonal line across remaining columns)
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Relinquished By: [Signature]		Received By: [Signature]		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: All Results are emailed. Please provide Email address: bheill@ensolum.com, TMorrissey@ensolum.com, Model@ensolum.com						
Relinquished By: [Signature]		Received By: [Signature]		REMARKS: Cost Center: 2266531001 Incident ID: nAPP2415057335 API: 20-015-54910						
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C -0.2		Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		CHECKED BY: [Signature]		Turnaround Time: Standard Thermometer ID: #1140 Bacteria (only) <input checked="" type="checkbox"/> Sample Condition Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Corrected Temp. °C		

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

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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 375167

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	375167
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2415057335
Incident Name	NAPP2415057335 PLU 20 DTD 222H-223H @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Plan Received

Location of Release Source

Please answer all the questions in this group.

Site Name	PLU 20 DTD 222H-223H
Date Release Discovered	05/20/2024
Surface Owner	State

Incident Details

Please answer all the questions in this group.

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release

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	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure Flow Line - Production Produced Water Released: 34 BBL Recovered: 10 BBL Lost: 24 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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QUESTIONS, Page 2

Action 375167

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	375167
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
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: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 05/29/2024
--	--

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District IV

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

QUESTIONS, Page 3

Action 375167

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	375167
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 500 and 1000 (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
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between ½ and 1 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between ½ and 1 (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)	10700
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	0
GRO+DRO	(EPA SW-846 Method 8015M)	0
BTEX	(EPA SW-846 Method 8021B or 8260B)	0
Benzene	(EPA SW-846 Method 8021B or 8260B)	0

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	05/20/2024
On what date will (or did) the final sampling or liner inspection occur	11/10/2024
On what date will (or was) the remediation complete(d)	11/10/2024
What is the estimated surface area (in square feet) that will be reclaimed	1500
What is the estimated volume (in cubic yards) that will be reclaimed	55
What is the estimated surface area (in square feet) that will be remediated	1500
What is the estimated volume (in cubic yards) that will be remediated	55

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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Oil Conservation Division
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QUESTIONS, Page 4

Action 375167

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	375167
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS**Remediation Plan (continued)**

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

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

(Select all answers below that apply.)

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

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

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

I hereby agree and sign off to the above statement	Name: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 08/19/2024
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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.

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, Page 5

Action 375167

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	375167
	Action Type:	
		[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Deferral Requests Only	
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 375167

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	375167
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	363900
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	07/19/2024
What was the (estimated) number of samples that were to be gathered	35
What was the sampling surface area in square feet	7000

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 375167

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 375167
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan approved. Submit remediation closure report to the OCD by 11/19/2024.	8/21/2024