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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAPP2118226017
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

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

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

Unit Letter	Section	Township	Range	County

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2118226017
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

☐ The source of the release has been stopped.
☐ The impacted area has been secured to protect human health and the environment.
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name: _____ Title: _____

Signature: Adrian Bates Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Ramona Marcus Date: 7/7/2021

NAPP2118226017

Location:	**Remuda 500 CTB**	
Spill Date:	**6/21/2021**	

Area 1		
Approximate Area =	33.69	cu.ft.
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	6.00	bbls
Area 2		
Approximate Area =	1788.00	sq. ft.
Average Saturation (or depth) of spill =	0.25	inches

Average Porosity Factor =	0.15	

VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	1.00	bbls

TOTAL VOLUME OF LEAK		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**7.00**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**6.00**	**bbls**

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

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

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 34549
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rmarcus	None	7/7/2021

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2118226017
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>105 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2118226017
District RP	
Facility ID	
Application ID	

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

Printed Name: Garrett Green Title: Environmental Coordinator

Signature: Date: 07/25/2022

email: garrett.green@exxonmobil.com Telephone: (575)-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 08/19/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2118226017
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Garrett Green Title: Envoronmental Coordinator

Signature: Date: 07/25/2022

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 08/19/2022

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

Closure Approved by: Date: 11/29/2022

Printed Name: Jocelyn Harimon Title: Environmental Specialist

ENSOLUM

July 22, 2022

District II
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

Re: Closure Request Addendum
Remuda 500 Central Tank Battery
Incident Number NAPP2118226017
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following addendum to a Closure Request submitted on September 19, 2021 at the Remuda 500 Centeral Tank Battery (CTB) (Site; Figure 1). This Addendum provides an update to the delineation activities completed at the Site, in response to the denial by the New Mexico Oil Conservation Division (NMOCD) of a previously submitted Closure Request. In the denial, NMOCD expressed concern that the lateral delineation was insufficent. Based on the deliniation sampling activities described below, XTO is requesting no further action (NFA) for Incident Number NAPP2118226017.

BACKGROUND

On June 21, 2021, a water pump seal failed, resulting in the release of approximately 7 barrels (bbls) of produced water into lined containment and onto the caliche well pad surface. A vacuum truck was dispatched to the Site to recover free-standing fluids; approximately 6 bbls of produced water were recovered from within the containment. XTO reported the release to the NMOCD on a Release Notification Form C-141 (Form C-141) on June 29, 2021. The release was assigned Incident Number NAPP2118226017.

A Closure Request detailing site characterization according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC) was included in a previously submitted closure request. Based on the site characterization, the following the Closure Criteria were applied:

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

Site assessment activities were conducted at the Site to assess for the presence or absence of impacts to soil resulting from the produced water release. Preliminary soil samples SS01 through SS03 and delineation soil samples from potholes PH01 through PH06 were collected from within the release extent at depths ranging from 0.5 feet to 4 feet below ground surface (bgs). Laboratory analytical results for the preliminary and delineation soil samples indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Additionally, the release was vertically delineated to below the most stringent Table 1 Closure Criteria as indicated by PH02A at 4 feet bgs and PH05A at 4 feet bgs. Laboratory analytical results from the sampling activities are summarized in Table 1 and soil sample locations are depicted on Figure 2 and Figure 3, which were presented in the original closure request submitted to the NMOCD on September 19, 2021. On February 3, 2022, NMOCD denied the Closure Request for Incident Number NAPP2118226017 for the following reasons:

- *"The closure request is denied. Delineation of edges/sidewalls of a release requires clean samples equal or less than 600 mg/kg for chloride and 100 mg/kg for TPH. If the edge of the spill has been visually identified, a sample will need to be pulled from the clean side to prove the extent. Once that is accomplished, you can excavate to the table 1 criteria on the pad. This will define the edge of the release and ensure the release did not leave the pad. While the vertical definition of contamination that may be acceptable is almost driven by the depth to water, as determined, and as driven by Table 1 in rule, horizontal definition is different. The edges (horizontal definition) of a liquid release must be determined as well. The only value of determination of horizontal impact are derived by either "background" value as determined appropriate to Rule 29, or, for chloride, 600 mg/kg in soils. This 600 mg/kg value is discussed in detail in 19.15.29.13.D (1)."*

ADDITIONAL DELINEATION ACTIVITIES

On June 28, 2022, Ensolum personnel returned to the Site to collect additional lateral delineation (horizontal definition) soil samples. Four soil samples (SS01 through SS04) were collected from a depth of 0.5 feet bgs around the release extent to confirm the lateral extent of the release. The lateral deliniation soil sample locations are depicted on Figure 3 (SS01 through SS04). Laboratory analytical results for the soil samples SS01 through SS04 (collected in 2022) indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentration were compliant with Site Closure Criteria and provided lateral delineation to below the most stringent Table 1 Closure Criteria. The soil sample analytical results are summarized on Table 1 and the complete laboratory analytical reports are included as Appendix A.

CLOSURE REQUEST

Site assessment activities were completed at the Site to assess for the presence or absence of impacts to soil resulting from the June 21, 2021, produced water release. Based on the laboratory analytical results in compliance with the Site Closure Criteria and the lateral delineation soil samples in compliance with the most stringent Table 1 Closure Criteria, XTO respectfully request NFA for Incident Number NAPP2118226017.

If you have any questions or comments, please contact Ms. Ashley Ager at (970) 496-1093 or aager@ensolum.com.

Sincerely,
Ensolum, LLC

Josh Adams, P.G.
Project Geologist

Ashley Ager, P.G.
Program Director

cc: Garrett Green, XTO
New Mexico State Land Office

Appendices:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results (2022)
Appendix A	2022 Laboratory Analytical Reports

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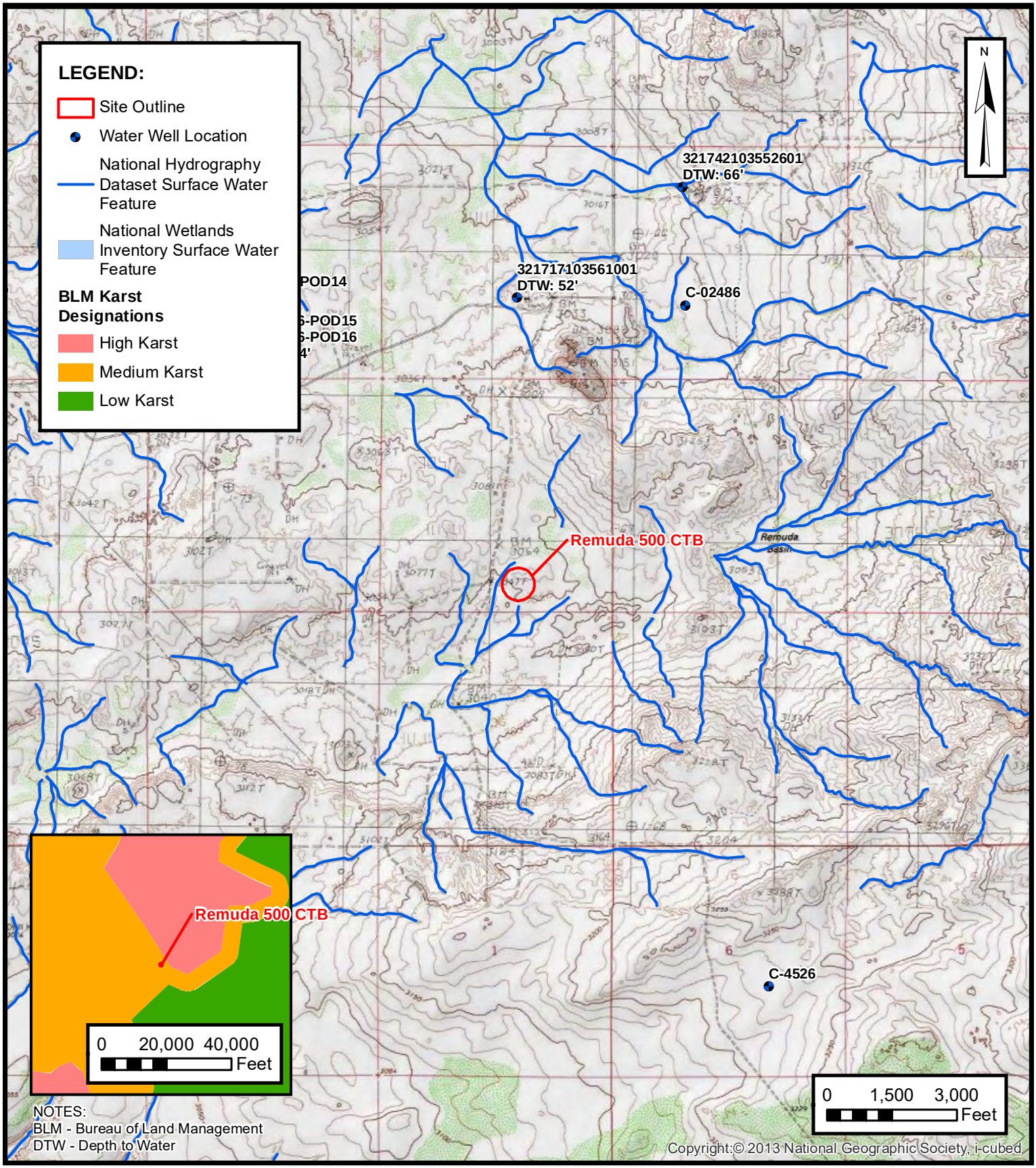
FIGURES

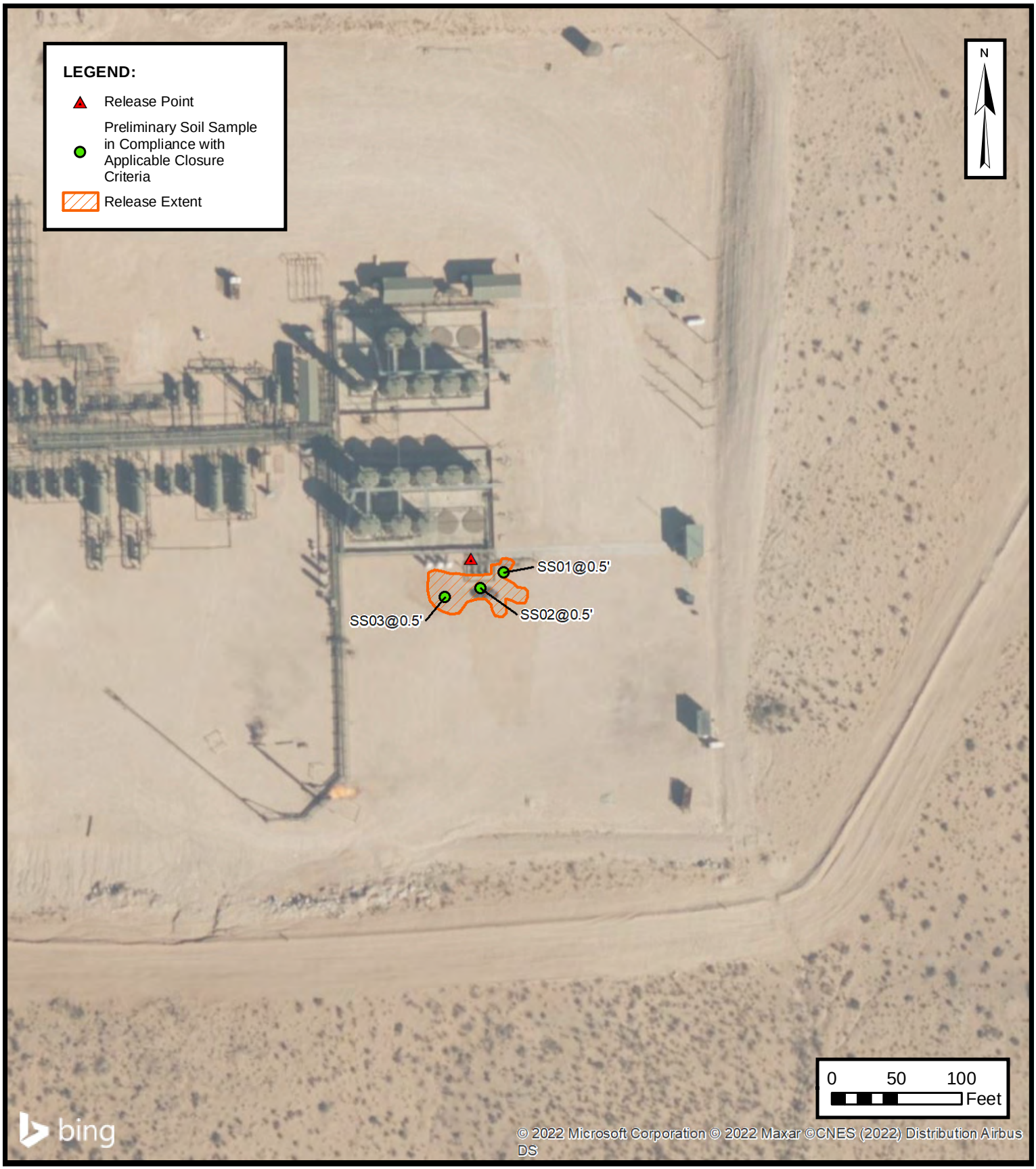


ENSOLUM
Environmental & Hydrogeologic Consultants

SITE RECEPTOR MAP

XTO ENERGY, INC
REMUDA 500 CTB
NAPP2118226017
Unit O, Section 25, Township 23S, Range 29E
Eddy County, New Mexico

FIGURE
1



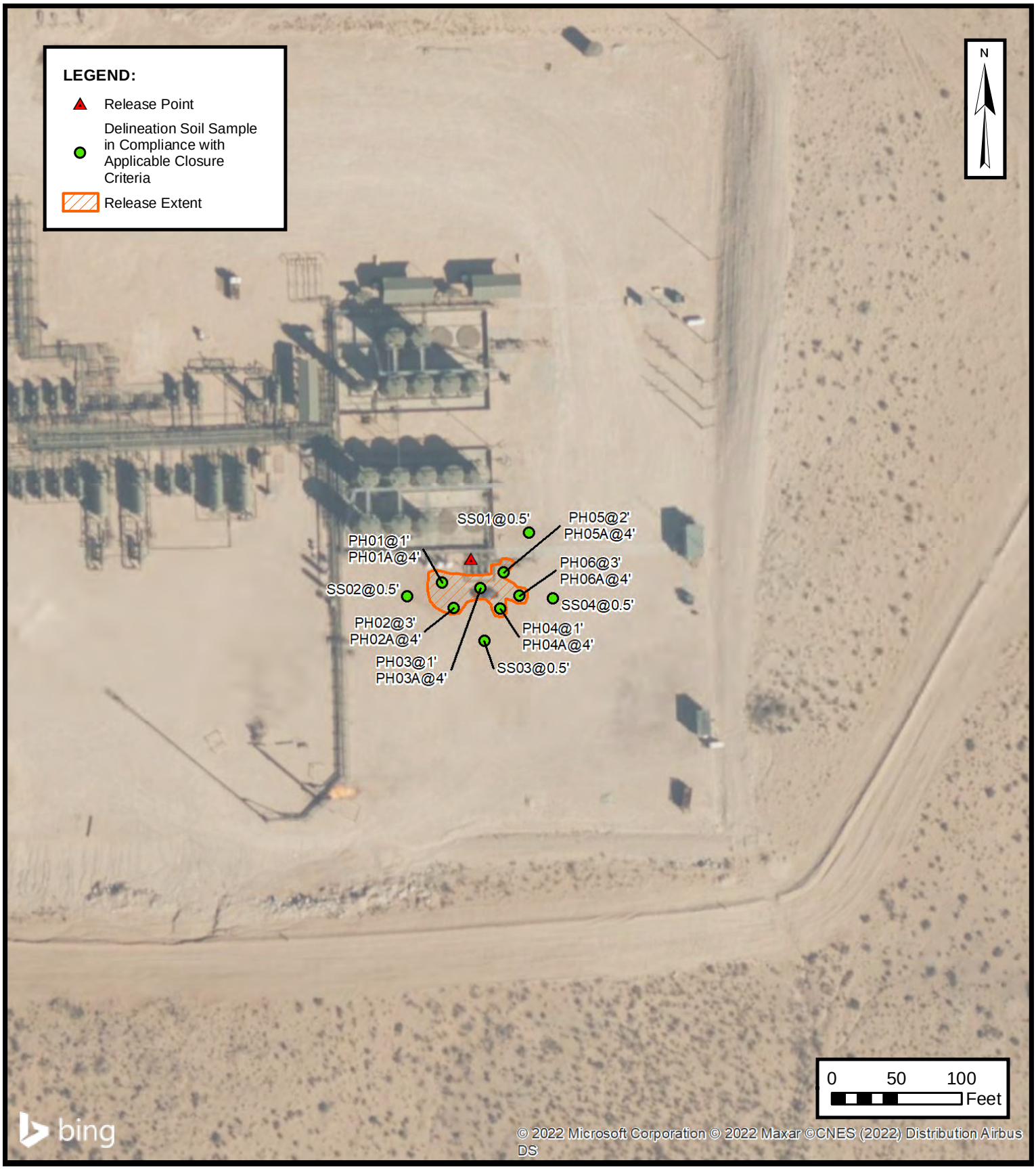
ENSOLUM
Environmental & Hydrogeologic Consultants

PRELIMINARY SAMPLE LOCATIONS

XTO ENERGY, INC
REMUDA 500 CTB
NAPP2118226017
Unit O, Section 25, Township 23S, Range 29E
Eddy County, New Mexico

FIGURE

2



ENSOLUM
Environmental & Hydrogeologic Consultants

DELINEATION SOIL SAMPLES

XTO ENERGY, INC
REMUDA 500 CTB
NAPP2118226017
Unit O, Section 25, Township 23S, Range 29E
Eddy County, New Mexico

FIGURE

3

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TABLE

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Remuda 500 CTB
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 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Preliminary Soil Samples										
SS01	07/13/2021	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	4,480
SS02	07/13/2021	0.5	<0.00200	<0.00401	157	<50.0	<50.0	157	157	8,400
SS03	07/13/2021	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	6,340
Delineation Samples										
PH01	08/04/2021	1	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	2,560
PH01A	08/04/2021	4	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	5,240
PH02	08/04/2021	3	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	1,330
PH02A	08/04/2021	4	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	261
PH03	08/04/2021	1	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	172
PH03A	08/04/2021	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	775
PH04	08/04/2021	1	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	3,230
PH04A	08/04/2021	4	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	<49.8	1,230
PH05	08/04/2021	2	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	<49.8	1,860
PH05A	08/04/2021	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	523
PH06	08/04/2021	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	508
PH06A	08/04/2021	4	<0.00199	<0.00398	<50.0	128	<50.0	128	128	229
Lateral Delineation Samples										
SS01	06/28/2022	0.5	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
SS02	06/28/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	231
SS03	06/28/2022	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	245
SS04	06/28/2022	0.5	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	<49.8	35.6

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon

ENSOLUM

APPENDIX A

2022 Laboratory Analytical Report

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2491-1
Laboratory Sample Delivery Group: 03E1558075
Client Project/Site: Remuda 500

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Aimee Cole

JKramer

Authorized for release by:
7/12/2022 9:23:48 AM

Jessica Kramer, Project Manager
(432)704-5440
Jessica.Kramer@et.eurofinsus.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Remuda 500

Laboratory Job ID: 890-2491-1
SDG: 03E1558075

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-2491-1
Project/Site: Remuda 500 SDG: 03E1558075

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Job ID: 890-2491-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2491-1

Receipt
The samples were received on 7/1/2022 9:03 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): SS01 (890-2491-1), SS02 (890-2491-2), SS03 (890-2491-3) and SS04 (890-2491-4). The container labels list <SAMPLE_ID>, while the COC lists <SAMPLEID>. The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

890-2491
COC says
SS01 6-28-22 1020 0.5
SS02 6-28-22 1030 0.5
SS03 6-28-22 1040 0.5
SS04 6-28-22 1050 0.5

JARS
SS04 6-28-22 1020
SS05 6-28-22 1030
SS06 6-28-22 1040
SS07 6-28-22 1050

Based off the information these are the same samples based off the time and date on both coc and sample jars

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-29058 and analytical batch 880-29100 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Client Sample ID: SS01

Lab Sample ID: 890-2491-1
Matrix: Solid
Date Collected: 06/28/22 10:20
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		07/09/22 14:01	07/10/22 08:08	1
Toluene	<0.00198	U	0.00198		mg/Kg		07/09/22 14:01	07/10/22 08:08	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		07/09/22 14:01	07/10/22 08:08	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		07/09/22 14:01	07/10/22 08:08	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		07/09/22 14:01	07/10/22 08:08	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		07/09/22 14:01	07/10/22 08:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*07/09/22 14:01*	*07/10/22 08:08*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*07/09/22 14:01*	*07/10/22 08:08*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			07/11/22 11:06	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/07/22 12:40	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *+	49.9		mg/Kg		07/05/22 14:40	07/06/22 01:06	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/05/22 14:40	07/06/22 01:06	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/05/22 14:40	07/06/22 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*07/05/22 14:40*	*07/06/22 01:06*	*1*
o-Terphenyl	*125*		*70 - 130*	*07/05/22 14:40*	*07/06/22 01:06*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46.1**		5.00		mg/Kg			07/08/22 09:57	1

Client Sample ID: SS02

Lab Sample ID: 890-2491-2
Matrix: Solid
Date Collected: 06/28/22 10:30
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/09/22 14:01	07/10/22 08:28	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/09/22 14:01	07/10/22 08:28	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/09/22 14:01	07/10/22 08:28	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/09/22 14:01	07/10/22 08:28	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/09/22 14:01	07/10/22 08:28	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/09/22 14:01	07/10/22 08:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*07/09/22 14:01*	*07/10/22 08:28*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Client Sample ID: SS02

Lab Sample ID: 890-2491-2
Matrix: Solid
Date Collected: 06/28/22 10:30
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*07/09/22 14:01*	*07/10/22 08:28*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/11/22 11:06	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/07/22 12:40	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+	50.0	mg/Kg		07/05/22 14:40	07/06/22 01:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/05/22 14:40	07/06/22 01:27	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/05/22 14:40	07/06/22 01:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*07/05/22 14:40*	*07/06/22 01:27*	*1*
o-Terphenyl	*110*		*70 - 130*	*07/05/22 14:40*	*07/06/22 01:27*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**231**		4.95	mg/Kg			07/08/22 10:06	1

Client Sample ID: SS03

Lab Sample ID: 890-2491-3
Matrix: Solid
Date Collected: 06/28/22 10:40
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/11/22 11:47	07/12/22 04:03	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/11/22 11:47	07/12/22 04:03	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/11/22 11:47	07/12/22 04:03	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/11/22 11:47	07/12/22 04:03	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/11/22 11:47	07/12/22 04:03	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/11/22 11:47	07/12/22 04:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*	*07/11/22 11:47*	*07/12/22 04:03*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*	*07/11/22 11:47*	*07/12/22 04:03*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/11/22 11:06	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/07/22 12:40	1

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Client Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Client Sample ID: SS03

Lab Sample ID: 890-2491-3
Matrix: Solid
Date Collected: 06/28/22 10:40
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+	50.0		mg/Kg		07/05/22 14:40	07/06/22 01:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/05/22 14:40	07/06/22 01:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/05/22 14:40	07/06/22 01:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*07/05/22 14:40*	*07/06/22 01:48*	*1*
o-Terphenyl	*114*		*70 - 130*	*07/05/22 14:40*	*07/06/22 01:48*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**245**		4.96		mg/Kg			07/08/22 10:16	1

Client Sample ID: SS04

Lab Sample ID: 890-2491-4
Matrix: Solid
Date Collected: 06/28/22 10:50
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		07/11/22 11:47	07/12/22 04:28	1
Toluene	<0.00198	U	0.00198		mg/Kg		07/11/22 11:47	07/12/22 04:28	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		07/11/22 11:47	07/12/22 04:28	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		07/11/22 11:47	07/12/22 04:28	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		07/11/22 11:47	07/12/22 04:28	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		07/11/22 11:47	07/12/22 04:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*07/11/22 11:47*	*07/12/22 04:28*	*1*
1,4-Difluorobenzene (Surr)	*83*		*70 - 130*	*07/11/22 11:47*	*07/12/22 04:28*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			07/11/22 11:06	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			07/07/22 12:40	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *+	49.8		mg/Kg		07/05/22 14:40	07/06/22 02:10	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		07/05/22 14:40	07/06/22 02:10	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/05/22 14:40	07/06/22 02:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*07/05/22 14:40*	*07/06/22 02:10*	*1*
o-Terphenyl	*110*		*70 - 130*	*07/05/22 14:40*	*07/06/22 02:10*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Client Sample ID: SS04
Date Collected: 06/28/22 10:50
Date Received: 07/01/22 09:03
Sample Depth: 0.5

Lab Sample ID: 890-2491-4
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35.6		5.05		mg/Kg			07/08/22 10:25	1

Surrogate Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-16698-A-11-E MS	Matrix Spike	111	103										
880-16698-A-11-F MSD	Matrix Spike Duplicate	110	102										
890-2491-1	SS01	112	95										
890-2491-2	SS02	117	96										
890-2491-3	SS03	120	82										
890-2491-3 MS	SS03	121	84										
890-2491-3 MSD	SS03	114	82										
890-2491-4	SS04	109	83										
LCS 880-29360/1-A	Lab Control Sample	113	104										
LCS 880-29434/1-A	Lab Control Sample	120	89										
LCSD 880-29360/2-A	Lab Control Sample Dup	113	104										
LCSD 880-29434/2-A	Lab Control Sample Dup	125	85										
MB 880-29325/5-A	Method Blank	99	90										
MB 880-29360/5-A	Method Blank	104	93										
MB 880-29368/5-A	Method Blank	81	80										
MB 880-29434/5-A	Method Blank	86	79										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2490-A-21-H MS	Matrix Spike	107	111										
890-2490-A-21-I MSD	Matrix Spike Duplicate	107	110										
890-2491-1	SS01	112	125										
890-2491-2	SS02	100	110										
890-2491-3	SS03	101	114										
890-2491-4	SS04	100	110										
LCS 880-29058/2-A	Lab Control Sample	92	94										
LCSD 880-29058/3-A	Lab Control Sample Dup	95	101										
MB 880-29058/1-A	Method Blank	109	121										

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-29325/5-A
Matrix: Solid
Analysis Batch: 29358

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29325

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/08/22 14:51	07/09/22 16:11	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/08/22 14:51	07/09/22 16:11	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/08/22 14:51	07/09/22 16:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/08/22 14:51	07/09/22 16:11	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/08/22 14:51	07/09/22 16:11	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/08/22 14:51	07/09/22 16:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*07/08/22 14:51*	*07/09/22 16:11*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*07/08/22 14:51*	*07/09/22 16:11*	*1*

Lab Sample ID: MB 880-29360/5-A
Matrix: Solid
Analysis Batch: 29358

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29360

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/09/22 14:01	07/10/22 03:20	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/09/22 14:01	07/10/22 03:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/09/22 14:01	07/10/22 03:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/09/22 14:01	07/10/22 03:20	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/09/22 14:01	07/10/22 03:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/09/22 14:01	07/10/22 03:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*07/09/22 14:01*	*07/10/22 03:20*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*07/09/22 14:01*	*07/10/22 03:20*	*1*

Lab Sample ID: LCS 880-29360/1-A
Matrix: Solid
Analysis Batch: 29358

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29360

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1120		mg/Kg		112	70 - 130		
Toluene			0.100	0.1081		mg/Kg		108	70 - 130		
Ethylbenzene			0.100	0.1124		mg/Kg		112	70 - 130		
m-Xylene & p-Xylene			0.200	0.2330		mg/Kg		117	70 - 130		
o-Xylene			0.100	0.1229		mg/Kg		123	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 880-29360/2-A
Matrix: Solid
Analysis Batch: 29358

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29360

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1089		mg/Kg		109	70 - 130	3	35

QC Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-29360/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29358 — **Prep Batch: 29360**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1033		mg/Kg		103	70 - 130	5	35
Ethylbenzene			0.100	0.1106		mg/Kg		111	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.2268		mg/Kg		113	70 - 130	3	35
o-Xylene			0.100	0.1233		mg/Kg		123	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-16698-A-11-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29358 — **Prep Batch: 29360**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.1101		mg/Kg		110	70 - 130
Toluene	<0.00199	U	0.0998	0.1064		mg/Kg		106	70 - 130
Ethylbenzene	<0.00199	U	0.0998	0.1093		mg/Kg		109	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2257		mg/Kg		112	70 - 130
o-Xylene	<0.00199	U	0.0998	0.1192		mg/Kg		119	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 880-16698-A-11-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29358 — **Prep Batch: 29360**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.1060		mg/Kg		106	70 - 130	4	35
Toluene	<0.00199	U	0.100	0.1020		mg/Kg		101	70 - 130	4	35
Ethylbenzene	<0.00199	U	0.100	0.1052		mg/Kg		104	70 - 130	4	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2165		mg/Kg		107	70 - 130	4	35
o-Xylene	<0.00199	U	0.100	0.1126		mg/Kg		112	70 - 130	6	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: MB 880-29368/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29380 — **Prep Batch: 29368**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/10/22 14:09	07/11/22 11:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/10/22 14:09	07/11/22 11:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/10/22 14:09	07/11/22 11:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/10/22 14:09	07/11/22 11:51	1

QC Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-29368/5-A
Matrix: Solid
Analysis Batch: 29380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29368

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/10/22 14:09	07/11/22 11:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/10/22 14:09	07/11/22 11:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*	*07/10/22 14:09*	*07/11/22 11:51*	*1*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*	*07/10/22 14:09*	*07/11/22 11:51*	*1*

Lab Sample ID: MB 880-29434/5-A
Matrix: Solid
Analysis Batch: 29380

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29434

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/11/22 11:47	07/12/22 03:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/11/22 11:47	07/12/22 03:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/11/22 11:47	07/12/22 03:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/11/22 11:47	07/12/22 03:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/11/22 11:47	07/12/22 03:37	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/11/22 11:47	07/12/22 03:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*07/11/22 11:47*	*07/12/22 03:37*	*1*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*	*07/11/22 11:47*	*07/12/22 03:37*	*1*

Lab Sample ID: LCS 880-29434/1-A
Matrix: Solid
Analysis Batch: 29380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29434

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08859		mg/Kg		89	70 - 130		
Toluene			0.100	0.09338		mg/Kg		93	70 - 130		
Ethylbenzene			0.100	0.09925		mg/Kg		99	70 - 130		
m-Xylene & p-Xylene			0.200	0.1974		mg/Kg		99	70 - 130		
o-Xylene			0.100	0.1160		mg/Kg		116	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 880-29434/2-A
Matrix: Solid
Analysis Batch: 29380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29434

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08556		mg/Kg		86	70 - 130	3	35
Toluene			0.100	0.09204		mg/Kg		92	70 - 130	1	35
Ethylbenzene			0.100	0.09312		mg/Kg		93	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1907		mg/Kg		95	70 - 130	3	35
o-Xylene			0.100	0.1058		mg/Kg		106	70 - 130	9	35

QC Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	125		70 - 130
1,4-Difluorobenzene (Surr)	85		70 - 130

Lab Sample ID: 890-2491-3 MS
Matrix: Solid
Analysis Batch: 29380

Client Sample ID: SS03
Prep Type: Total/NA
Prep Batch: 29434

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.101	0.08093		mg/Kg		80	70 - 130
Toluene	<0.00200	U	0.101	0.08986		mg/Kg		89	70 - 130
Ethylbenzene	<0.00200	U	0.101	0.09249		mg/Kg		92	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.202	0.1874		mg/Kg		93	70 - 130
o-Xylene	<0.00200	U	0.101	0.1022		mg/Kg		101	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	84		70 - 130

Lab Sample ID: 890-2491-3 MSD
Matrix: Solid
Analysis Batch: 29380

Client Sample ID: SS03
Prep Type: Total/NA
Prep Batch: 29434

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.08202		mg/Kg		82	70 - 130	1	35
Toluene	<0.00200	U	0.100	0.08618		mg/Kg		86	70 - 130	4	35
Ethylbenzene	<0.00200	U	0.100	0.09013		mg/Kg		90	70 - 130	3	35
m-Xylene & p-Xylene	<0.00399	U	0.200	0.1843		mg/Kg		92	70 - 130	2	35
o-Xylene	<0.00200	U	0.100	0.09839		mg/Kg		98	70 - 130	4	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	82		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-29058/1-A
Matrix: Solid
Analysis Batch: 29100

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29058

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/05/22 14:40	07/05/22 17:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/05/22 14:40	07/05/22 17:50	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/05/22 14:40	07/05/22 17:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130	07/05/22 14:40	07/05/22 17:50	1
o-Terphenyl	121		70 - 130	07/05/22 14:40	07/05/22 17:50	1

QC Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-29058/2-A
Matrix: Solid
Analysis Batch: 29100

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29058

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1526	*+	mg/Kg		153	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	943.8		mg/Kg		94	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*92*		*70 - 130*
o-Terphenyl	*94*		*70 - 130*

Lab Sample ID: LCSD 880-29058/3-A
Matrix: Solid
Analysis Batch: 29100

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29058

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1390	*+	mg/Kg		139	70 - 130	9	20
Diesel Range Organics (Over C10-C28)			1000	1055		mg/Kg		106	70 - 130	11	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

Lab Sample ID: 890-2490-A-21-H MS
Matrix: Solid
Analysis Batch: 29100

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29058

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+	997	1104		mg/Kg		111	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	997	932.4		mg/Kg		94	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*111*		*70 - 130*

Lab Sample ID: 890-2490-A-21-I MSD
Matrix: Solid
Analysis Batch: 29100

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 29058

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+	998	1093		mg/Kg		110	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	926.4		mg/Kg		93	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-2490-A-21-I MSD
Matrix: Solid
Analysis Batch: 29100

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 29058

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	110		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-28997/1-A
Matrix: Solid
Analysis Batch: 29213

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/08/22 07:48	1

Lab Sample ID: LCS 880-28997/2-A
Matrix: Solid
Analysis Batch: 29213

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	243.8		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-28997/3-A
Matrix: Solid
Analysis Batch: 29213

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	244.3		mg/Kg		98	90 - 110	0	20

Lab Sample ID: 890-2491-4 MS
Matrix: Solid
Analysis Batch: 29213

Client Sample ID: SS04
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	35.6		253	314.4		mg/Kg		110	90 - 110		

Lab Sample ID: 890-2491-4 MSD
Matrix: Solid
Analysis Batch: 29213

Client Sample ID: SS04
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	35.6		253	304.1		mg/Kg		106	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

GC VOA

Prep Batch: 29325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-29325/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 29358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Total/NA	Solid	8021B	29360
890-2491-2	SS02	Total/NA	Solid	8021B	29360
MB 880-29325/5-A	Method Blank	Total/NA	Solid	8021B	29325
MB 880-29360/5-A	Method Blank	Total/NA	Solid	8021B	29360
LCS 880-29360/1-A	Lab Control Sample	Total/NA	Solid	8021B	29360
LCSD 880-29360/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	29360
880-16698-A-11-E MS	Matrix Spike	Total/NA	Solid	8021B	29360
880-16698-A-11-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	29360

Prep Batch: 29360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Total/NA	Solid	5035	
890-2491-2	SS02	Total/NA	Solid	5035	
MB 880-29360/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-29360/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-29360/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-16698-A-11-E MS	Matrix Spike	Total/NA	Solid	5035	
880-16698-A-11-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 29368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-29368/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 29380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-3	SS03	Total/NA	Solid	8021B	29434
890-2491-4	SS04	Total/NA	Solid	8021B	29434
MB 880-29368/5-A	Method Blank	Total/NA	Solid	8021B	29368
MB 880-29434/5-A	Method Blank	Total/NA	Solid	8021B	29434
LCS 880-29434/1-A	Lab Control Sample	Total/NA	Solid	8021B	29434
LCSD 880-29434/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	29434
890-2491-3 MS	SS03	Total/NA	Solid	8021B	29434
890-2491-3 MSD	SS03	Total/NA	Solid	8021B	29434

Analysis Batch: 29425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Total/NA	Solid	Total BTEX	
890-2491-2	SS02	Total/NA	Solid	Total BTEX	
890-2491-3	SS03	Total/NA	Solid	Total BTEX	
890-2491-4	SS04	Total/NA	Solid	Total BTEX	

Prep Batch: 29434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-3	SS03	Total/NA	Solid	5035	
890-2491-4	SS04	Total/NA	Solid	5035	
MB 880-29434/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-29434/1-A	Lab Control Sample	Total/NA	Solid	5035	

QC Association Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

GC VOA (Continued)

Prep Batch: 29434 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-29434/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2491-3 MS	SS03	Total/NA	Solid	5035	
890-2491-3 MSD	SS03	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 29058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Total/NA	Solid	8015NM Prep	
890-2491-2	SS02	Total/NA	Solid	8015NM Prep	
890-2491-3	SS03	Total/NA	Solid	8015NM Prep	
890-2491-4	SS04	Total/NA	Solid	8015NM Prep	
MB 880-29058/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-29058/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-29058/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2490-A-21-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2490-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 29100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Total/NA	Solid	8015B NM	29058
890-2491-2	SS02	Total/NA	Solid	8015B NM	29058
890-2491-3	SS03	Total/NA	Solid	8015B NM	29058
890-2491-4	SS04	Total/NA	Solid	8015B NM	29058
MB 880-29058/1-A	Method Blank	Total/NA	Solid	8015B NM	29058
LCS 880-29058/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	29058
LCSD 880-29058/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	29058
890-2490-A-21-H MS	Matrix Spike	Total/NA	Solid	8015B NM	29058
890-2490-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	29058

Analysis Batch: 29206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Total/NA	Solid	8015 NM	
890-2491-2	SS02	Total/NA	Solid	8015 NM	
890-2491-3	SS03	Total/NA	Solid	8015 NM	
890-2491-4	SS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 28997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Soluble	Solid	DI Leach	
890-2491-2	SS02	Soluble	Solid	DI Leach	
890-2491-3	SS03	Soluble	Solid	DI Leach	
890-2491-4	SS04	Soluble	Solid	DI Leach	
MB 880-28997/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-28997/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-28997/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2491-4 MS	SS04	Soluble	Solid	DI Leach	
890-2491-4 MSD	SS04	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

HPLC/IC

Analysis Batch: 29213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2491-1	SS01	Soluble	Solid	300.0	28997
890-2491-2	SS02	Soluble	Solid	300.0	28997
890-2491-3	SS03	Soluble	Solid	300.0	28997
890-2491-4	SS04	Soluble	Solid	300.0	28997
MB 880-28997/1-A	Method Blank	Soluble	Solid	300.0	28997
LCS 880-28997/2-A	Lab Control Sample	Soluble	Solid	300.0	28997
LCSD 880-28997/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	28997
890-2491-4 MS	SS04	Soluble	Solid	300.0	28997
890-2491-4 MSD	SS04	Soluble	Solid	300.0	28997

Lab Chronicle

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Client Sample ID: SS01

Date Collected: 06/28/22 10:20
Date Received: 07/01/22 09:03

Lab Sample ID: 890-2491-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	29360	07/09/22 14:01	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29358	07/10/22 08:08	AJ	XEN MID
Total/NA	Analysis	Total BTEX		1			29425	07/11/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29206	07/07/22 12:40	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	29058	07/05/22 14:40	AM	XEN MID
Total/NA	Analysis	8015B NM		1			29100	07/06/22 01:06	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	28997	07/05/22 09:12	CH	XEN MID
Soluble	Analysis	300.0		1			29213	07/08/22 09:57	CH	XEN MID

Client Sample ID: SS02

Date Collected: 06/28/22 10:30
Date Received: 07/01/22 09:03

Lab Sample ID: 890-2491-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	29360	07/09/22 14:01	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29358	07/10/22 08:28	AJ	XEN MID
Total/NA	Analysis	Total BTEX		1			29425	07/11/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29206	07/07/22 12:40	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29058	07/05/22 14:40	AM	XEN MID
Total/NA	Analysis	8015B NM		1			29100	07/06/22 01:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	28997	07/05/22 09:12	CH	XEN MID
Soluble	Analysis	300.0		1			29213	07/08/22 10:06	CH	XEN MID

Client Sample ID: SS03

Date Collected: 06/28/22 10:40
Date Received: 07/01/22 09:03

Lab Sample ID: 890-2491-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	29434	07/11/22 11:47	EL	XEN MID
Total/NA	Analysis	8021B		1			29380	07/12/22 04:03	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29425	07/11/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29206	07/07/22 12:40	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29058	07/05/22 14:40	AM	XEN MID
Total/NA	Analysis	8015B NM		1			29100	07/06/22 01:48	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	28997	07/05/22 09:12	CH	XEN MID
Soluble	Analysis	300.0		1			29213	07/08/22 10:16	CH	XEN MID

Client Sample ID: SS04

Date Collected: 06/28/22 10:50
Date Received: 07/01/22 09:03

Lab Sample ID: 890-2491-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	29434	07/11/22 11:47	EL	XEN MID
Total/NA	Analysis	8021B		1			29380	07/12/22 04:28	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29425	07/11/22 11:06	SM	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Client Sample ID: SS04

Date Collected: 06/28/22 10:50
Date Received: 07/01/22 09:03

Lab Sample ID: 890-2491-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			29206	07/07/22 12:40	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	29058	07/05/22 14:40	AM	XEN MID
Total/NA	Analysis	8015B NM		1			29100	07/06/22 02:10	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	28997	07/05/22 09:12	CH	XEN MID
Soluble	Analysis	300.0		1			29213	07/08/22 10:25	CH	XEN MID

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Ensolum
Project/Site: Remuda 500

Job ID: 890-2491-1
SDG: 03E1558075

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2491-1	SS01	Solid	06/28/22 10:20	07/01/22 09:03	0.5
890-2491-2	SS02	Solid	06/28/22 10:30	07/01/22 09:03	0.5
890-2491-3	SS03	Solid	06/28/22 10:40	07/01/22 09:03	0.5
890-2491-4	SS04	Solid	06/28/22 10:50	07/01/22 09:03	0.5

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: ____

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Project Manager:	Aimee Cole	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E Greene ST
City, State ZIP:	Carlsbad NM 88220	City, State ZIP:	Carlsbad NM 88220
Phone:	720-384-7365	Email:	garrett.green@exxonmobile.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Remuda 500	Turn Around	☑ Routine ☐ Rush
Project Number:	03E155 8075	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Chris Brown		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TWM-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	5.6
Total Containers:		Corrected Temperature:	5.4

ANALYSIS REQUEST — Parameters: BTEX (EPA 8021), TPH (8015), CHL (300)

890-2491 Chain of Custody

Preservative Codes

None: NO	DI Water: H_2O
Cool: Cool	MeOH: Me
HCL: HC	HNO_3: HN
H_2SO_4: H_2	NaOH: Na
H_3PO_4: HP	
$NaHSO_4$: NABIS	
$Na_2S_2O_3$: $NaSO_3$	
Zn Acetate+NaOH: Zn	
NaOH+Ascorbic Acid: SAPC	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTEX	TPH	CHL	Sample Comments
SS01	S	6-28	10:20	.5	G	1	X	X	X	Inc ID!
SS02	S	6-28	10:30	.5	G	1	X	X	X	NAPP 2118226017
SS03	S	6-28	10:40	.5	G	1	X	X	X	
SS04	S	6-28	10:50	.5	G	1	X	X	X	CC: 1067601001

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 [signature]	[signature]	7.1.22 9:03	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Carlsbad
1089 N Canal St
Carlsbad NM 88220
Phone. 575-988-3199 Fax 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Kramer Jessica	Carrier Tracking No(s):	COC No: 890-827 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jessica Kramer@et.eurofinsus com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-2491-1
Address: 1211 W Florida Ave	Due Date Requested: 7/8/2022			
City: Midland	TAT Requested (days):			
State Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #:			
Email	WO #:			
Project Name: remuda 500	Project #: 88001197			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O - AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V - MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH	8015MOD_Calc	300_ORGFM_28D/DI_LEACH Chloride	8021B/5035FP_Calc (MOD) BTEX	Total_BTEX_GCV	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
ss01 (890-2491-1)	6/28/22	10 20 Mountain		Solid			X	X	X	X	X	1	
ss02 (890-2491-2)	6/28/22	10 30 Mountain		Solid			X	X	X	X	X	1	
ss03 (890-2491-3)	6/28/22	10 40 Mountain		Solid			X	X	X	X	X	1	
ss04 (890-2491-4)	6/28/22	10 50 Mountain		Solid			X	X	X	X	X	1	

Note Since laboratory accreditations are subject to change Eurofins Environment Testing South Central, LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company
Clue			KRAMER	7/7/22 900	
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact. Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 3.9/3.6

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2491-1
SDG Number: 03E1558075

Login Number: 2491
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2491-1
SDG Number: 03E1558075

Login Number: 2491
List Number: 2
Creator: Kramer, Jessica

List Source: Eurofins Midland
List Creation: 07/05/22 09:17 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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

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

CONDITIONS

Action 135639

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 135639
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	11/29/2022