ENSOLUM

November 25, 2024

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

Re: Closure Request
Muy Wayno 7 State 1H
API 30-015-37700
Incident Number NMAP1829649787
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Closure Request* as a follow-up to the *Deferral Request* dated December 31, 2018. The *Deferral Request* was approved by the New Mexico Oil Conservation Division (NMOCD) on April 8, 2019. This *Closure Request* documents the excavation and soil sampling activities completed at the Muy Wayno 7 State 1H (Site) following final plugging and abandonment of the well and removal of the surface production equipment from the deferred area. Based on the additional remediation activities described below, XTO is submitting this *Closure Request* and requesting no further action and closure for Incident Number NMAP1829649787.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit C, Section 7, Township 25 South, Range 30 East, in Eddy County, New Mexico (32.15115, -103.92266) and is associated with oil and gas exploration and production operations on State Land managed by the New Mexico State Land Office (SLO) under lease number V0-8205-0002.

On October 3, 2018, approximately 25 barrels (bbls) of crude oil and 35.2 bbls of produced water were released from a tank battery within a lined containment. The majority of the released fluids were contained within the lined tank battery containment berm. A light mist impacted the surface soil northwest of the tank battery. Vacuum trucks were dispatched to the Site and used to recover the standing fluid; approximately 25 bbls of crude oil and 35 bbls of produced water were recovered from the lined containment and returned to the tanks. XTO reported the release to the NMOCD on October 3, 2018, and submitted a Release Notification Form C-141 (Form C-141) on October 18, 2018. The release was assigned Remediation Permit (RP) Number 2RP-5023 and Incident Number NMAP1829649787.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to determine 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 were detailed in the approved *Deferral Request*. Potential Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (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 organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

Since the well was been plugged and abandoned and the well pad will be reclaimed, a reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH applies to the top 4 feet per NMAC 19.15.29.13.D (1), for areas that will be reclaimed following remediation.

Between November 2018 and December 2018, assessment and excavation activities were conducted at the Site to address the impacted soil resulting from the October 3, 2018, crude oil and produced water release. Impacted soil was excavated to the maximum extent possible; however, impacted soil was left in place for compliance with XTO safety policy regarding earth-moving activities within two feet of active production equipment. This policy was enforced where impacted soil was identified within two feet of the lined tank battery containment. A *Deferral Request* was submitted to the NMOCD requesting deferral of the impacted soil until a future major well pad alteration or final plugging and abandonment. The *Deferral Request* was approved by the NMOCD on April 8, 2019. Additional details regarding the excavation and soil sampling activities can be referenced in the December 31, 2018, *Deferral Request*, which is included as an attachment to this report.

NMSLO CULTURAL RESOURCES AND BIOLOGICAL REVIEW

Cultural Properties Protection

Since the release occurred on the well pad, the site is exempt from the Cultural Properties Protection Rule (CPP). As such, no additional cultural resource surveys were completed in connection with this release.

Biological Review

Ensolum personnel conducted a desktop review to establish if the Site is within an area of possible threatened, endangered, and sensitive wildlife and plant species, environmentally sensitive areas, surface waters, and sensitive soils.

- A review of the U.S. Fish and Wildlife Services Information for Planning and Consultation (IPaC) resources indicated there are no critical wildlife habitats at the Site. Threatened and endangered cactus species are potentially present in the area surrounding the Site; however, no native vegetation outside of the well pad extent was disturbed during remediation activities.
- No environmentally sensitive receptors were located near the Site, as determined by the Site Characterization.
- The Natural Resources Conservation Service (NRCS) Web Soil Survey classifies the soil type at the Site as Simona-Bippus Complex. The release occurred on the caliche surface of the well pad limiting contact with potentially sensitive native soil.

REMEDIATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On April 10, 2023, Ensolum personnel completed an inspection of the Site and confirmed that the well was plugged and abandoned and all surface production equipment had been removed. Based on removal of the storage tanks and access to the deferral area, final remediation of the Site was scheduled.

On April 18, 2023, Ensolum personnel were at the Site to oversee delineation and excavation activities to address the impacted soil that remained in place immediately adjacent to and beneath the former lined containment, as indicated by original excavation sidewall sample, SW01. The 2018 excavation extent, soil sample locations, and laboratory analytical results are included in the attached *Deferral Request*. Excavation activities were performed using a backhoe and transport vehicles. To direct excavation activities, soil was field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The excavation was completed to a depth of 1-foot bgs.

Following removal of the impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS04 and FS05 were collected from the floor of the excavation at a depth of 1-foot bgs. Composite soil sample SW02 was collected from the sidewall of the excavation at depths ranging from the ground surface to 1-foot bgs. The excavation extent and excavation soil sample locations are presented on Figure 2.

Potholes PH03 and PH04 were advanced to depths of 0.5 feet and 1-foot bgs in the vicinity of the initial 2018 potholes PH01 and PH02, to assess for the presence or absence of residual TPH impacted soil. Photographic documentation of the delineation and excavation activities are included in Appendix A.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following constituents of concern (COC): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for the delineation soil samples collected from potholes PH03 and PH04 indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirements. Laboratory analytical results for excavation floor sample FS04 indicated all COC concentrations were compliant with the Site Closure Criteria and reclamation requirements. Laboratory analytical results for excavation samples FS05 and SW02 indicated TPH concentrations exceeded reclamation requirements.

On May 8 and July 28, 2023, Ensolum personnel returned to the Site to oversee additional excavation activities based on laboratory analytical results for excavation samples FS05 and SW02. In the area of FS05, the excavation was completed to a total depth of 1.5 feet bgs and subsequent floor sample FS05A was collected from the floor of the excavation. Sidewall soil samples SW03, and subsequently SW04 were collected from depths ranging from ground surface to 1.5 feet bgs from the expanded excavation extent. Laboratory analytical results for excavation soil samples FS04, FS05A, and SW04, collected from the final excavation extent were compliant with the reclamation requirements. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix B. Notifications of sampling events are included in Appendix C.

The excavation area measured approximately 275 square feet. A total of 15 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Hobbs, New Mexico.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the deferred impacted soil resulting from the October 3, 2018, crude oil and produced water release within the lined containment. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COCs were compliant with the Site Closure Criteria and reclamation requirements. Based on the soil sample analytical results, no further remediation is required. A copy of the *Deferral Request* detailing the 2018 excavation activities is included as Appendix D.

Initial response efforts, natural attenuation, and excavation of impacted soil have mitigated impacts at this Site. XTO believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NMAP1829649787.

The well was plugged and abandoned and all surface production equipment has been removed from the Site. Final reclamation of the well pad is scheduled to be completed in the near future. Once reclamation activities have been completed, a *Reclamation Summary Report* will be submitted to the NMOCD, documenting the reclamation activities.

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

Sincerely,
Ensolum, LLC

Tracy Hillard
Project Engineer

Aimee Cole
Senior Managing Scientist

cc: Colton Brown, XTO
Kaylan Dirkx, XTO
SLO

Appendices:

Figure 1	Site Receptor Map
Figure 2	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Photographic Log
Appendix B	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix C	NMOCD Notifications
Appendix D	December 31, 2018, *Deferral Request*

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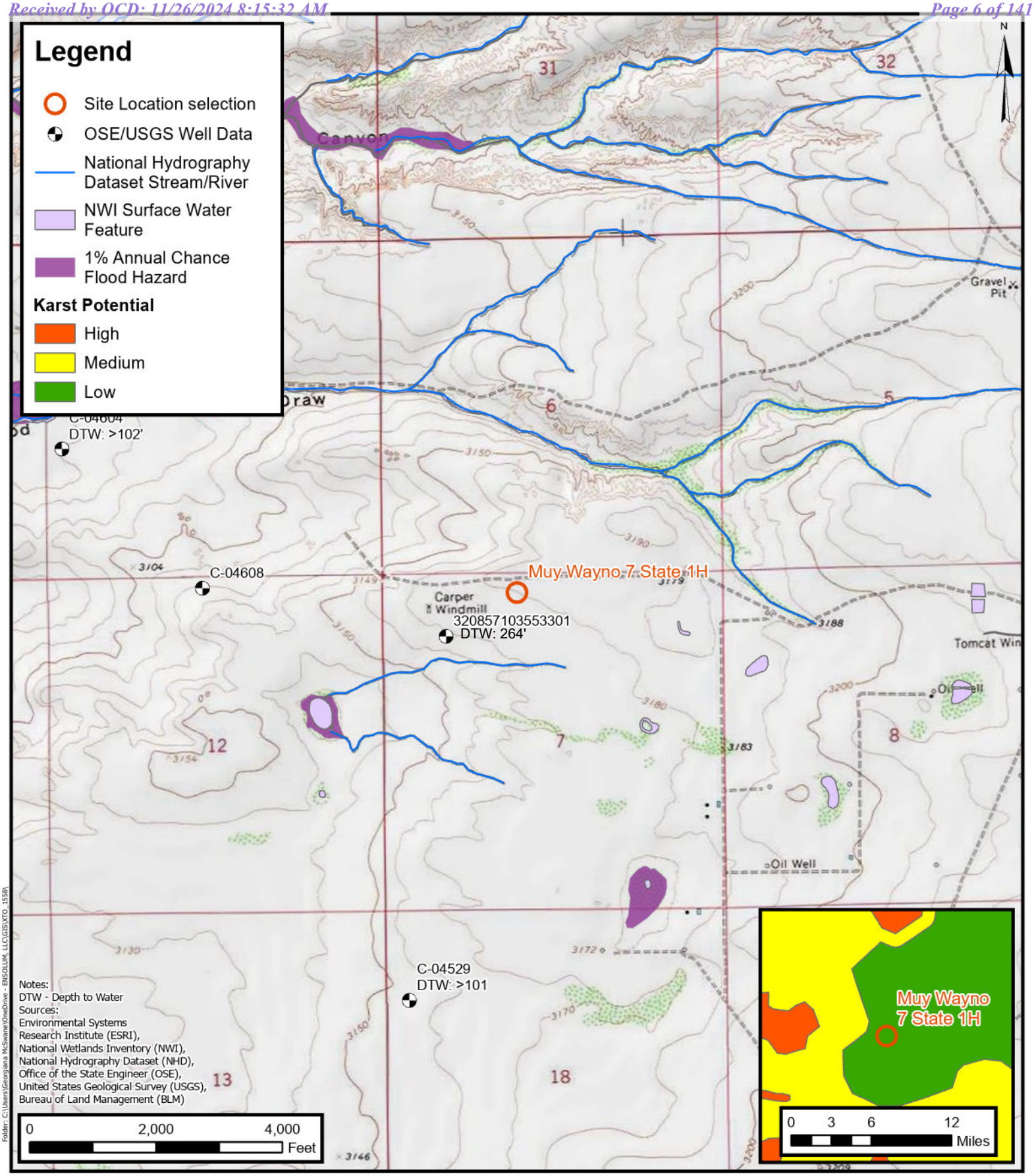
FIGURES



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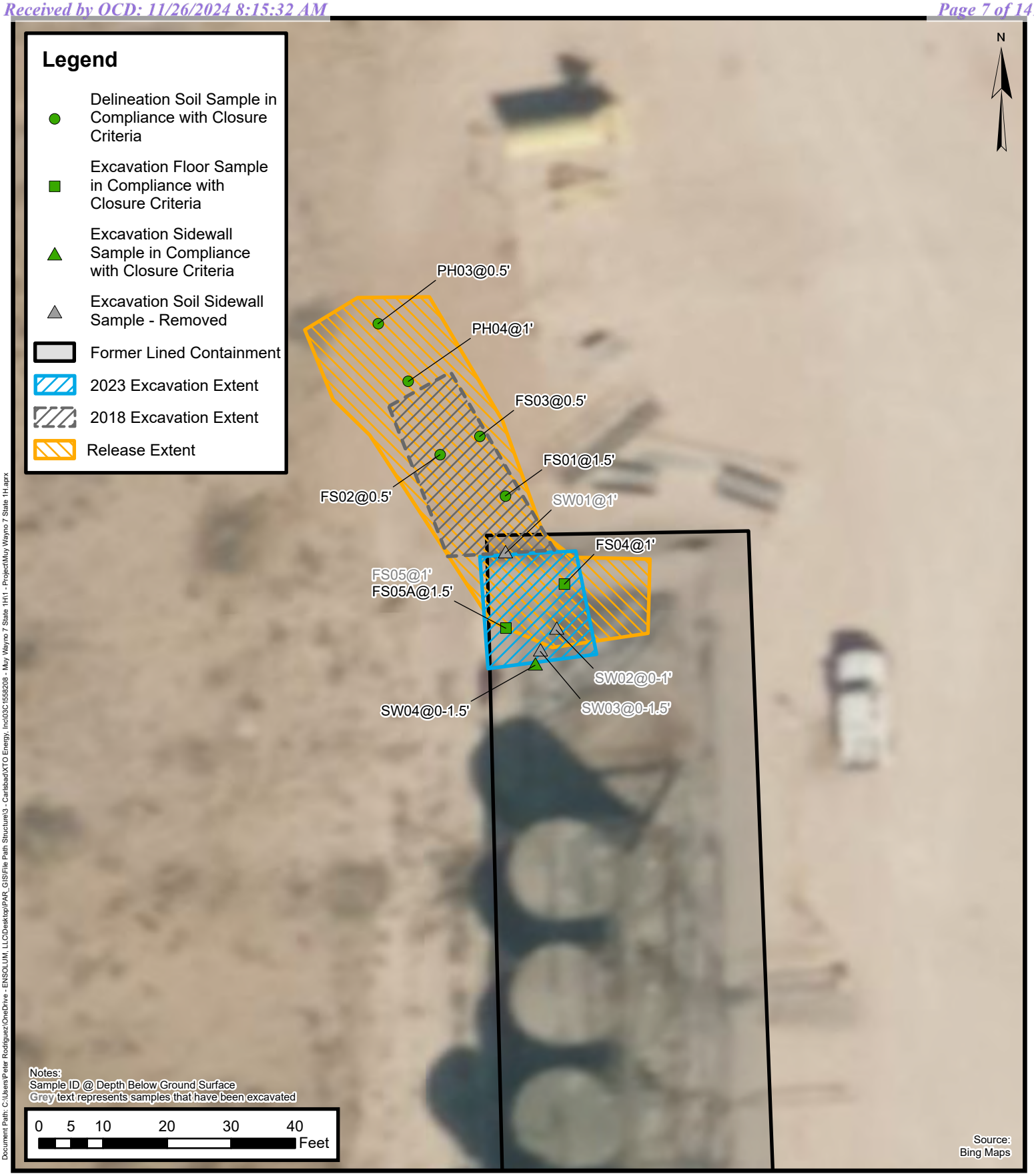
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

XTO Energy, Inc
Muy Wayno 7 State 1H
Incident Number: NMAP1829649787
Unit C, Section 7, T25S, R30E
Eddy County, New Mexico

FIGURE 1



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Environmental, Engineering and Hydrogeologic Consultants

Excavation Soil Sample Locations

XTO Energy, Inc
Muy Wayno 7 State 1H
Incident Number: NMAP1829649787
Unit C, Section 7, Township 25S, Range 30E
Eddy County, New Mexico

FIGURE

2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
MUY WAYNO 7 STATE 1H
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**
NMOCD Reclamation Requirements for the top four feet.			**NE**	**NE**	**NE**	**NE**	**NE**	**100**	**100**	**600**
Delineation Soil Samples										
PH01A	12/04/2018	Surface	<0.00200	<0.00200	<15.0	337	43	337	**380**	253
PH01B	12/04/2018	0.5	<0.00201	<0.00201	<15.0	50.1	<15.0	50.1	50.1	72.2
PH03	04/18/2023	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	48.2
PH02A	12/04/2018	0.5	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	30.8
PH02B	12/04/2018	1	<0.00199	<0.00199	<15.0	232	38.5	232	**271**	65.3
PH04	04/18/2023	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	71.2
Excavation Floor Soil Samples										
FS01	12/04/2018	1.5	<0.00200	<0.00200	<15.0	94.1	<15.0	94.1	94.1	434
FS02	12/04/2018	0.5	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	152
FS03	12/04/2018	0.5	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	70.5
FS04	04/18/2023	1	<0.00199	<0.00398	<49.9	78.6	<49.9	78.6	78.6	96.5
~~FS05~~	~~04/18/2023~~	~~1~~	~~<0.00200~~	~~<0.00399~~	~~<50.0~~	~~138~~	~~<50.0~~	~~138~~	~~138~~	~~191~~
FS05A	05/08/2023	1.5	<0.00200	<0.00401	<49.9	98.7	<49.9	98.7	98.7	460
Excavation Sidewall Soil Samples										
~~SW01~~	~~12/04/2018~~	~~1~~	~~<0.00199~~	~~0.01100~~	~~44.8~~	~~1,340~~	~~46.9~~	~~1,380~~	~~1,430~~	~~408~~
~~SW02~~	~~04/18/2023~~	~~0-1~~	~~<0.00198~~	~~<0.00396~~	~~<49.9~~	~~203~~	~~<49.9~~	~~203~~	~~203~~	~~74.4~~
~~SW03~~	~~05/08/2023~~	~~0-1.5~~	~~<0.00199~~	~~<0.00398~~	~~<50.0~~	~~115~~	~~<50.0~~	~~115~~	~~**115**~~	~~79.2~~
SW04	07/28/2023	0-1.5	<0.00202	<0.00403	<50.4	<50.4	<50.4	<50.4	<50.4	76.5

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

NE: Not Established

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

Grey text indicates the 2018 soil sample was resampled during 2023

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APPENDIX A

Photographic Log

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Photographic Log
XTO Energy, Inc.
Muy Wayno 7 State 1H
NMAP1829649787

Photograph 1 Date: April 18, 2023

Description: Southwest view of excavation activites

Photograph 2 Date: July 28, 2023

Description: View of excavation facing south.

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APPENDIX B

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

Muy Wayno 7 State 1H
SDG NUMBER 03C1558208

JOB NUMBER

890-4535-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

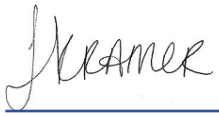
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Laboratory Job ID: 890-4535-1
SDG: 03C1558208

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4535-1
Project/Site: Muy Wayno 7 State 1H SDG: 03C1558208

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control 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: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Job ID: 890-4535-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4535-1

Receipt
The samples were received on 4/18/2023 3:19 PM. 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 4.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH03 (890-4535-1), PH04 (890-4535-2), FS04 (890-4535-3), FS05 (890-4535-4) and SW02 (890-4535-5).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: FS05 (890-4535-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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: Surrogate recovery for the following sample was outside control limits: (MB 880-51651/1-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: PH03 (890-4535-1) and FS04 (890-4535-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Client Sample ID: PH03

Date Collected: 04/18/23 09:30
Date Received: 04/18/23 15:19
Sample Depth: 0.5'

Lab Sample ID: 890-4535-1
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 15:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 15:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 15:47	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		04/19/23 16:34	04/20/23 15:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 15:47	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		04/19/23 16:34	04/20/23 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*130*		*70 - 130*	*04/19/23 16:34*	*04/20/23 15:47*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*	*04/19/23 16:34*	*04/20/23 15:47*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			04/21/23 14:04	1

Method: SW846 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			04/21/23 17:20	1

Method: SW846 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		04/20/23 16:48	04/21/23 13:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/20/23 16:48	04/21/23 13:19	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/20/23 16:48	04/21/23 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*3*	*S1-*	*70 - 130*	*04/20/23 16:48*	*04/21/23 13:19*	*1*
o-Terphenyl	*0.2*	*S1-*	*70 - 130*	*04/20/23 16:48*	*04/21/23 13:19*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**48.2**		4.97		mg/Kg			04/26/23 00:05	1

Client Sample ID: PH04

Date Collected: 04/18/23 09:40
Date Received: 04/18/23 15:19
Sample Depth: 1'

Lab Sample ID: 890-4535-2
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		04/19/23 16:34	04/20/23 16:07	1
Toluene	<0.00199	U	0.00199		mg/Kg		04/19/23 16:34	04/20/23 16:07	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		04/19/23 16:34	04/20/23 16:07	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		04/19/23 16:34	04/20/23 16:07	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		04/19/23 16:34	04/20/23 16:07	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		04/19/23 16:34	04/20/23 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*04/19/23 16:34*	*04/20/23 16:07*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Client Sample ID: PH04

Date Collected: 04/18/23 09:40
Date Received: 04/18/23 15:19
Sample Depth: 1'

Lab Sample ID: 890-4535-2

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*04/19/23 16:34*	*04/20/23 16:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			04/21/23 14:04	1

Method: SW846 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			04/21/23 17:20	1

Method: SW846 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		04/20/23 16:48	04/21/23 13:41	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/20/23 16:48	04/21/23 13:41	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/20/23 16:48	04/21/23 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*04/20/23 16:48*	*04/21/23 13:41*	*1*
o-Terphenyl	*106*		*70 - 130*	*04/20/23 16:48*	*04/21/23 13:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**71.2**		5.00	mg/Kg			04/26/23 15:04	1

Client Sample ID: FS04

Date Collected: 04/18/23 09:45
Date Received: 04/18/23 15:19
Sample Depth: 1'

Lab Sample ID: 890-4535-3

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		04/19/23 16:34	04/20/23 16:28	1
Toluene	<0.00199	U	0.00199	mg/Kg		04/19/23 16:34	04/20/23 16:28	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		04/19/23 16:34	04/20/23 16:28	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		04/19/23 16:34	04/20/23 16:28	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		04/19/23 16:34	04/20/23 16:28	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		04/19/23 16:34	04/20/23 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*	*04/19/23 16:34*	*04/20/23 16:28*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*04/19/23 16:34*	*04/20/23 16:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			04/21/23 14:04	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**78.6**		49.9	mg/Kg			04/21/23 17:20	1

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Client Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Client Sample ID: FS04

Date Collected: 04/18/23 09:45
Date Received: 04/18/23 15:19
Sample Depth: 1'

Lab Sample ID: 890-4535-3
Matrix: Solid

Method: SW846 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		04/20/23 16:48	04/21/23 14:03	1
Diesel Range Organics (Over C10-C28)	**78.6**		49.9		mg/Kg		04/20/23 16:48	04/21/23 14:03	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/20/23 16:48	04/21/23 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*135*	*S1+*	*70 - 130*	*04/20/23 16:48*	*04/21/23 14:03*	*1*
o-Terphenyl	*128*		*70 - 130*	*04/20/23 16:48*	*04/21/23 14:03*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**96.5**		5.00		mg/Kg			04/26/23 00:14	1

Client Sample ID: FS05

Date Collected: 04/18/23 09:50
Date Received: 04/18/23 15:19
Sample Depth: 1'

Lab Sample ID: 890-4535-4
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 17:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 17:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 17:16	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		04/19/23 16:34	04/20/23 17:16	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 17:16	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		04/19/23 16:34	04/20/23 17:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*135*	*S1+*	*70 - 130*	*04/19/23 16:34*	*04/20/23 17:16*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*04/19/23 16:34*	*04/20/23 17:16*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			04/21/23 14:04	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**138**		50.0		mg/Kg			04/21/23 17:20	1

Method: SW846 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		04/20/23 16:48	04/21/23 14:24	1
Diesel Range Organics (Over C10-C28)	**138**		50.0		mg/Kg		04/20/23 16:48	04/21/23 14:24	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/20/23 16:48	04/21/23 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*04/20/23 16:48*	*04/21/23 14:24*	*1*
o-Terphenyl	*114*		*70 - 130*	*04/20/23 16:48*	*04/21/23 14:24*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Client Sample ID: FS05

Lab Sample ID: 890-4535-4
Matrix: Solid
Date Collected: 04/18/23 09:50
Date Received: 04/18/23 15:19
Sample Depth: 1'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**191**		5.03		mg/Kg			04/26/23 00:19	1

Client Sample ID: SW02

Lab Sample ID: 890-4535-5
Matrix: Solid
Date Collected: 04/18/23 09:55
Date Received: 04/18/23 15:19
Sample Depth: 0-1'

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		04/19/23 16:34	04/20/23 17:36	1
Toluene	<0.00198	U	0.00198		mg/Kg		04/19/23 16:34	04/20/23 17:36	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		04/19/23 16:34	04/20/23 17:36	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		04/19/23 16:34	04/20/23 17:36	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		04/19/23 16:34	04/20/23 17:36	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		04/19/23 16:34	04/20/23 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*04/19/23 16:34*	*04/20/23 17:36*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*04/19/23 16:34*	*04/20/23 17:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			04/21/23 14:04	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**203**		49.9		mg/Kg			04/21/23 17:20	1

Method: SW846 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		04/20/23 16:48	04/21/23 14:46	1
Diesel Range Organics (Over C10-C28)	**203**		49.9		mg/Kg		04/20/23 16:48	04/21/23 14:46	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/20/23 16:48	04/21/23 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*117*		*70 - 130*	*04/20/23 16:48*	*04/21/23 14:46*	*1*
o-Terphenyl	*113*		*70 - 130*	*04/20/23 16:48*	*04/21/23 14:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**74.4**		5.04		mg/Kg			04/26/23 00:23	1

Surrogate Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-27378-A-1-A MS	Matrix Spike	121	93
880-27378-A-1-B MSD	Matrix Spike Duplicate	114	95
890-4535-1	PH03	130	78
890-4535-2	PH04	123	100
890-4535-3	FS04	119	110
890-4535-4	FS05	135 S1+	93
890-4535-5	SW02	115	107
LCS 880-51535/1-A	Lab Control Sample	122	97
LCSD 880-51535/2-A	Lab Control Sample Dup	122	94
MB 880-51535/5-A	Method Blank	110	84

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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-27391-A-1-C MS	Matrix Spike	120	106
880-27391-A-1-D MSD	Matrix Spike Duplicate	115	101
890-4535-1	PH03	3 S1-	0.2 S1-
890-4535-2	PH04	113	106
890-4535-3	FS04	135 S1+	128
890-4535-4	FS05	118	114
890-4535-5	SW02	117	113
LCS 880-51651/2-A	Lab Control Sample	95	91
LCSD 880-51651/3-A	Lab Control Sample Dup	95	89
MB 880-51651/1-A	Method Blank	136 S1+	141 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-51535/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 51576 — **Prep Batch: 51535**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 10:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 10:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 10:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/19/23 16:34	04/20/23 10:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/23 16:34	04/20/23 10:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/19/23 16:34	04/20/23 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*04/19/23 16:34*	*04/20/23 10:55*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*04/19/23 16:34*	*04/20/23 10:55*	*1*

Lab Sample ID: LCS 880-51535/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 51576 — **Prep Batch: 51535**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1113		mg/Kg		111	70 - 130		
Toluene			0.100	0.1075		mg/Kg		108	70 - 130		
Ethylbenzene			0.100	0.1204		mg/Kg		120	70 - 130		
m-Xylene & p-Xylene			0.200	0.2520		mg/Kg		126	70 - 130		
o-Xylene			0.100	0.1235		mg/Kg		123	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 880-51535/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 51576 — **Prep Batch: 51535**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1086		mg/Kg		109	70 - 130	2	35
Toluene			0.100	0.1084		mg/Kg		108	70 - 130	1	35
Ethylbenzene			0.100	0.1206		mg/Kg		121	70 - 130	0	35
m-Xylene & p-Xylene			0.200	0.2516		mg/Kg		126	70 - 130	0	35
o-Xylene			0.100	0.1235		mg/Kg		123	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 880-27378-A-1-A MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 51576 — **Prep Batch: 51535**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U	0.0998	0.09999		mg/Kg		100	70 - 130		
Toluene	<0.00198	U	0.0998	0.1039		mg/Kg		104	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

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

Lab Sample ID: 880-27378-A-1-A MS
Matrix: Solid
Analysis Batch: 51576

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51535

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U	0.0998	0.1190		mg/Kg		119	70 - 130
m-Xylene & p-Xylene	<0.00396	U	0.200	0.2531		mg/Kg		127	70 - 130
o-Xylene	<0.00198	U	0.0998	0.1222		mg/Kg		122	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: 880-27378-A-1-B MSD
Matrix: Solid
Analysis Batch: 51576

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 51535

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.1077		mg/Kg		108	70 - 130	7	35
Toluene	<0.00198	U	0.100	0.1034		mg/Kg		103	70 - 130	1	35
Ethylbenzene	<0.00198	U	0.100	0.1132		mg/Kg		113	70 - 130	5	35
m-Xylene & p-Xylene	<0.00396	U	0.200	0.2350		mg/Kg		117	70 - 130	7	35
o-Xylene	<0.00198	U	0.100	0.1132		mg/Kg		113	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

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

Lab Sample ID: MB 880-51651/1-A
Matrix: Solid
Analysis Batch: 51659

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 51651

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		04/20/23 16:48	04/21/23 08:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/20/23 16:48	04/21/23 08:19	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/20/23 16:48	04/21/23 08:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*136*	*S1+*	*70 - 130*	*04/20/23 16:48*	*04/21/23 08:19*	*1*
o-Terphenyl	*141*	*S1+*	*70 - 130*	*04/20/23 16:48*	*04/21/23 08:19*	*1*

Lab Sample ID: LCS 880-51651/2-A
Matrix: Solid
Analysis Batch: 51659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51651

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	850.1		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)			1000	835.0		mg/Kg		83	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

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

Lab Sample ID: LCS 880-51651/2-A
Matrix: Solid
Analysis Batch: 51659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 51651

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	91		70 - 130

Lab Sample ID: LCSD 880-51651/3-A
Matrix: Solid
Analysis Batch: 51659

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 51651

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	843.5		mg/Kg		84	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	805.6		mg/Kg		81	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: 880-27391-A-1-C MS
Matrix: Solid
Analysis Batch: 51659

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 51651

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	1000	996.3		mg/Kg		97	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1067		mg/Kg		104	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	120		70 - 130
o-Terphenyl	106		70 - 130

Lab Sample ID: 880-27391-A-1-D MSD
Matrix: Solid
Analysis Batch: 51659

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 51651

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	1072		mg/Kg		105	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1008		mg/Kg		99	70 - 130	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	101		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-51898/1-A
Matrix: Solid
Analysis Batch: 52036

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			04/25/23 23:10	1

Lab Sample ID: LCS 880-51898/2-A
Matrix: Solid
Analysis Batch: 52036

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	248.8		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-51898/3-A
Matrix: Solid
Analysis Batch: 52036

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	244.7		mg/Kg		98	90 - 110	2	20

Lab Sample ID: 890-4534-A-1-E MS
Matrix: Solid
Analysis Batch: 52036

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	54.1		249	295.7		mg/Kg		97	90 - 110		

Lab Sample ID: 890-4534-A-1-F MSD
Matrix: Solid
Analysis Batch: 52036

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	54.1		249	291.7		mg/Kg		96	90 - 110	1	20

Lab Sample ID: 890-4537-A-1-D MSD
Matrix: Solid
Analysis Batch: 52036

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	360		252	593.2		mg/Kg		93	90 - 110	1	20

Lab Sample ID: 890-4537-A-1-E MS
Matrix: Solid
Analysis Batch: 52036

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	360		252	598.5		mg/Kg		95	90 - 110		

QC Association Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

GC VOA

Prep Batch: 51535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Total/NA	Solid	5035	
890-4535-2	PH04	Total/NA	Solid	5035	
890-4535-3	FS04	Total/NA	Solid	5035	
890-4535-4	FS05	Total/NA	Solid	5035	
890-4535-5	SW02	Total/NA	Solid	5035	
MB 880-51535/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-51535/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-51535/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-27378-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-27378-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 51576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Total/NA	Solid	8021B	51535
890-4535-2	PH04	Total/NA	Solid	8021B	51535
890-4535-3	FS04	Total/NA	Solid	8021B	51535
890-4535-4	FS05	Total/NA	Solid	8021B	51535
890-4535-5	SW02	Total/NA	Solid	8021B	51535
MB 880-51535/5-A	Method Blank	Total/NA	Solid	8021B	51535
LCS 880-51535/1-A	Lab Control Sample	Total/NA	Solid	8021B	51535
LCSD 880-51535/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	51535
880-27378-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	51535
880-27378-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	51535

Analysis Batch: 51721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Total/NA	Solid	Total BTEX	
890-4535-2	PH04	Total/NA	Solid	Total BTEX	
890-4535-3	FS04	Total/NA	Solid	Total BTEX	
890-4535-4	FS05	Total/NA	Solid	Total BTEX	
890-4535-5	SW02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 51651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Total/NA	Solid	8015NM Prep	
890-4535-2	PH04	Total/NA	Solid	8015NM Prep	
890-4535-3	FS04	Total/NA	Solid	8015NM Prep	
890-4535-4	FS05	Total/NA	Solid	8015NM Prep	
890-4535-5	SW02	Total/NA	Solid	8015NM Prep	
MB 880-51651/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-51651/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-51651/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-27391-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-27391-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 51659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Total/NA	Solid	8015B NM	51651
890-4535-2	PH04	Total/NA	Solid	8015B NM	51651

QC Association Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

GC Semi VOA (Continued)

Analysis Batch: 51659 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-3	FS04	Total/NA	Solid	8015B NM	51651
890-4535-4	FS05	Total/NA	Solid	8015B NM	51651
890-4535-5	SW02	Total/NA	Solid	8015B NM	51651
MB 880-51651/1-A	Method Blank	Total/NA	Solid	8015B NM	51651
LCS 880-51651/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	51651
LCSD 880-51651/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	51651
880-27391-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	51651
880-27391-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	51651

Analysis Batch: 51763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Total/NA	Solid	8015 NM	
890-4535-2	PH04	Total/NA	Solid	8015 NM	
890-4535-3	FS04	Total/NA	Solid	8015 NM	
890-4535-4	FS05	Total/NA	Solid	8015 NM	
890-4535-5	SW02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 51898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Soluble	Solid	DI Leach	
890-4535-2	PH04	Soluble	Solid	DI Leach	
890-4535-3	FS04	Soluble	Solid	DI Leach	
890-4535-4	FS05	Soluble	Solid	DI Leach	
890-4535-5	SW02	Soluble	Solid	DI Leach	
MB 880-51898/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-51898/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-51898/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4534-A-1-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4534-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-4537-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-4537-A-1-E MS	Matrix Spike	Soluble	Solid	DI Leach	

Analysis Batch: 52036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4535-1	PH03	Soluble	Solid	300.0	51898
890-4535-2	PH04	Soluble	Solid	300.0	51898
890-4535-3	FS04	Soluble	Solid	300.0	51898
890-4535-4	FS05	Soluble	Solid	300.0	51898
890-4535-5	SW02	Soluble	Solid	300.0	51898
MB 880-51898/1-A	Method Blank	Soluble	Solid	300.0	51898
LCS 880-51898/2-A	Lab Control Sample	Soluble	Solid	300.0	51898
LCSD 880-51898/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	51898
890-4534-A-1-E MS	Matrix Spike	Soluble	Solid	300.0	51898
890-4534-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	51898
890-4537-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	51898
890-4537-A-1-E MS	Matrix Spike	Soluble	Solid	300.0	51898

Lab Chronicle

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Client Sample ID: PH03

Date Collected: 04/18/23 09:30
Date Received: 04/18/23 15:19

Lab Sample ID: 890-4535-1
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			4.99 g	5 mL	51535	04/19/23 16:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51576	04/20/23 15:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51721	04/21/23 14:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			51763	04/21/23 17:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	51651	04/20/23 16:48	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51659	04/21/23 13:19	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	51898	04/25/23 07:33	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52036	04/26/23 00:05	SMC	EET MID

Client Sample ID: PH04

Date Collected: 04/18/23 09:40
Date Received: 04/18/23 15:19

Lab Sample ID: 890-4535-2
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			5.02 g	5 mL	51535	04/19/23 16:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51576	04/20/23 16:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51721	04/21/23 14:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			51763	04/21/23 17:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	51651	04/20/23 16:48	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51659	04/21/23 13:41	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	51898	04/25/23 07:33	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52036	04/26/23 15:04	SMC	EET MID

Client Sample ID: FS04

Date Collected: 04/18/23 09:45
Date Received: 04/18/23 15:19

Lab Sample ID: 890-4535-3
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			5.03 g	5 mL	51535	04/19/23 16:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51576	04/20/23 16:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51721	04/21/23 14:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			51763	04/21/23 17:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	51651	04/20/23 16:48	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51659	04/21/23 14:03	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	51898	04/25/23 07:33	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52036	04/26/23 00:14	SMC	EET MID

Client Sample ID: FS05

Date Collected: 04/18/23 09:50
Date Received: 04/18/23 15:19

Lab Sample ID: 890-4535-4
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			5.01 g	5 mL	51535	04/19/23 16:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51576	04/20/23 17:16	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51721	04/21/23 14:04	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Client Sample ID: FS05
Date Collected: 04/18/23 09:50
Date Received: 04/18/23 15:19

Lab Sample ID: 890-4535-4
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			51763	04/21/23 17:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	51651	04/20/23 16:48	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51659	04/21/23 14:24	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	51898	04/25/23 07:33	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52036	04/26/23 00:19	SMC	EET MID

Client Sample ID: SW02
Date Collected: 04/18/23 09:55
Date Received: 04/18/23 15:19

Lab Sample ID: 890-4535-5
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	51535	04/19/23 16:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	51576	04/20/23 17:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			51721	04/21/23 14:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			51763	04/21/23 17:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	51651	04/20/23 16:48	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	51659	04/21/23 14:46	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	51898	04/25/23 07:33	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52036	04/26/23 00:23	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

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	T104704400-22-25	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: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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:

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

Sample Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-4535-1
SDG: 03C1558208

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4535-1	PH03	Solid	04/18/23 09:30	04/18/23 15:19	0.5'
890-4535-2	PH04	Solid	04/18/23 09:40	04/18/23 15:19	1'
890-4535-3	FS04	Solid	04/18/23 09:45	04/18/23 15:19	1'
890-4535-4	FS05	Solid	04/18/23 09:50	04/18/23 15:19	1'
890-4535-5	SW02	Solid	04/18/23 09:55	04/18/23 15:19	0-1'

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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: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garret Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garret.Green@ExxonMobil.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:	Muy Wayno 7 State 1H	Turn Around	
Project Number:	03C1558208	☑ Routine ☐ Rush	
Project Location:	32.15115, -103.92266	Due Date:	
Sampler's Name:	Kase Parker	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT	Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:		TAM-80	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:		-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:		4.3	
Total Containers:		Corrected Temperature:		4.1	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH03	S	4/18/2023	9:30	0.5'	Grab/	1		x	x	x
PH04	S	4/18/2023	9:40	1'	Grab/	1		x	x	x
FS04	S	4/18/2023	9:45	1'	Comp	1		x	x	x
FS05	S	4/18/2023	9:50	1'	Comp	1		x	x	x
SW02	S	4/18/2023	9:55	0-1'	Comp	1		x	x	x

Parameters

890-4535 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_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 Comments

Incident ID:
NMAP182964787
Cost Center:
AFE:
PA.2022.06756.EXP.01
API:
30-015-37700
tmorrissey@ensolum.com

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		4/18/23 1519	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4535-1
SDG Number: 03C1558208

Login Number: 4535
List Number: 1
Creator: Stutzman, Amanda

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.	N/A	Refer to Job Narrative for details.
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: 890-4535-1
SDG Number: 03C1558208

Login Number: 4535
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 04/20/23 10:47 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 5/22/2023 3:33:20 PM Revision 1

JOB DESCRIPTION

MuyWayno 7 State 1H
SDG NUMBER 03C1558208

JOB NUMBER

890-4630-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

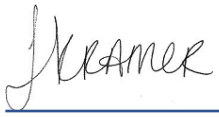
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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5/22/2023 3:33:20 PM
Revision 1

Authorized for release by
Jessica Kramer, Project Manager
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(432)704-5440

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Laboratory Job ID: 890-4630-1
SDG: 03C1558208

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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)

Definitions/Glossary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Job ID: 890-4630-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4630-1

REVISION

The report being provided is a revision of the original report sent on 5/10/2023. The report (revision 1) is being revised due to Per client email, requesting TPH re run on SW03.

Receipt
The samples were received on 5/8/2023 2:43 PM. 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 3.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: FS05A (890-4630-1) and SW03 (890-4630-2).

GC VOA
Method 8021B: The continuing calibration verification (CCV) associated with batch 880-53006 recovered above the upper control limit for Benzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following samples were outside control limits: FS05A (890-4630-1), SW03 (890-4630-2) and (MB 880-53010/5-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-53010 and analytical batch 880-53006 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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 surrogate recovery for the blank associated with preparation batch 880-53014 and analytical batch 880-52999 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-53014/2-A) and (LCSD 880-53014/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate compounds were inadvertently omitted during the extraction process for the following samples: (880-28227-A-1-D) and (880-28227-A-1-E MS).

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-28227-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: FS05A (890-4630-1) and SW03 (890-4630-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: An incorrect volume of spiking solution was inadvertently added to the laboratory control sample (LCS), laboratory control sample (LCSD) associated with preparation batch 880-53014 and analytical batch 880-52999. Percent recoveries are based on the amount spiked.

Method 8015MOD_NM: Spike compounds were inadvertently omitted during the extraction process for the matrix spike (MS); therefore, matrix spike recoveries are unavailable for preparation batch 880-53014 and analytical batch 880-52999. The associated laboratory control sample (LCS) met acceptance criteria.

Case Narrative

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Job ID: 890-4630-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-53014 and analytical batch 880-52999 was outside control limits. Sample matrix interference and/or non-homogeneity is suspected.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-53162 and analytical batch 880-53085 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-4640-A-1-C). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-53162 and analytical batch 880-53085 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-53012 and 880-53012 and analytical batch 880-53026 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.The associated samples are: FS05A (890-4630-1), SW03 (890-4630-2), (880-28232-A-1-A), (880-28232-A-1-B MS) and (880-28232-A-1-C MSD).

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: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Client Sample ID: FS05A
Date Collected: 05/08/23 13:05
Date Received: 05/08/23 14:43
Sample Depth: 1.5'

Lab Sample ID: 890-4630-1
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 13:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 13:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 13:10	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		05/10/23 08:58	05/10/23 13:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 13:10	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		05/10/23 08:58	05/10/23 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*70 - 130*	*05/10/23 08:58*	*05/10/23 13:10*	*1*
1,4-Difluorobenzene (Surr)	*69*	*S1-*	*70 - 130*	*05/10/23 08:58*	*05/10/23 13:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			05/10/23 16:44	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**98.7**		49.9		mg/Kg			05/10/23 19:35	1

Method: SW846 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		05/10/23 10:07	05/10/23 17:00	1
Diesel Range Organics (Over C10-C28)	**98.7**	***- *1**	49.9		mg/Kg		05/10/23 10:07	05/10/23 17:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/10/23 10:07	05/10/23 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*05/10/23 10:07*	*05/10/23 17:00*	*1*
o-Terphenyl	*135*	*S1+*	*70 - 130*	*05/10/23 10:07*	*05/10/23 17:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**460**		5.05		mg/Kg			05/10/23 11:45	1

Client Sample ID: SW03
Date Collected: 05/08/23 13:10
Date Received: 05/08/23 14:43
Sample Depth: 0-1.5'

Lab Sample ID: 890-4630-2
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		05/10/23 08:58	05/10/23 13:31	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/10/23 08:58	05/10/23 13:31	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/10/23 08:58	05/10/23 13:31	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/10/23 08:58	05/10/23 13:31	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/10/23 08:58	05/10/23 13:31	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/10/23 08:58	05/10/23 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*	*05/10/23 08:58*	*05/10/23 13:31*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Client Sample ID: SW03

Date Collected: 05/08/23 13:10
Date Received: 05/08/23 14:43
Sample Depth: 0-1.5'

Lab Sample ID: 890-4630-2

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*05/10/23 08:58*	*05/10/23 13:31*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			05/10/23 16:44	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**115**		50.0		mg/Kg			05/10/23 19:35	1

Method: SW846 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		05/11/23 14:31	05/12/23 04:52	1
Diesel Range Organics (Over C10-C28)	**115**		50.0		mg/Kg		05/11/23 14:31	05/12/23 04:52	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/11/23 14:31	05/12/23 04:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*98*		*70 - 130*	*05/11/23 14:31*	*05/12/23 04:52*	*1*
o-Terphenyl	*102*		*70 - 130*	*05/11/23 14:31*	*05/12/23 04:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**79.2**		4.98		mg/Kg			05/10/23 11:49	1

Surrogate Summary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-28227-A-4-A MS	Matrix Spike	99	115
880-28227-A-4-B MSD	Matrix Spike Duplicate	102	105
890-4630-1	FS05A	75	69 S1-
890-4630-2	SW03	78	68 S1-
LCS 880-53010/1-A	Lab Control Sample	108	104
LCSD 880-53010/2-A	Lab Control Sample Dup	108	106
MB 880-53010/5-A	Method Blank	66 S1-	77

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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-28227-A-1-E MS	Matrix Spike	2 S1-	0.4 S1-
880-28227-A-1-F MSD	Matrix Spike Duplicate	170 S1+	176 S1+
890-4630-1	FS05A	122	135 S1+
890-4630-2	SW03	98	102
890-4640-A-1-D MS	Matrix Spike	111	99
890-4640-A-1-E MSD	Matrix Spike Duplicate	118	109
LCS 880-53014/2-A	Lab Control Sample	62 S1-	74
LCS 880-53162/2-A	Lab Control Sample	90	101
LCSD 880-53014/3-A	Lab Control Sample Dup	50 S1-	57 S1-
LCSD 880-53162/3-A	Lab Control Sample Dup	107	117
MB 880-53014/1-A	Method Blank	117	150 S1+
MB 880-53162/1-A	Method Blank	131 S1+	152 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-53010/5-A
Matrix: Solid
Analysis Batch: 53006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53010

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 12:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 12:28	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 12:28	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/10/23 08:58	05/10/23 12:28	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/23 08:58	05/10/23 12:28	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/10/23 08:58	05/10/23 12:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*	*S1-*	*70 - 130*	*05/10/23 08:58*	*05/10/23 12:28*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*05/10/23 08:58*	*05/10/23 12:28*	*1*

Lab Sample ID: LCS 880-53010/1-A
Matrix: Solid
Analysis Batch: 53006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53010

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1261		mg/Kg		126	70 - 130		
Toluene			0.100	0.1265		mg/Kg		126	70 - 130		
Ethylbenzene			0.100	0.1252		mg/Kg		125	70 - 130		
m-Xylene & p-Xylene			0.200	0.2570		mg/Kg		129	70 - 130		
o-Xylene			0.100	0.1257		mg/Kg		126	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 880-53010/2-A
Matrix: Solid
Analysis Batch: 53006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53010

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1188		mg/Kg		119	70 - 130	6	35
Toluene			0.100	0.1175		mg/Kg		118	70 - 130	7	35
Ethylbenzene			0.100	0.1102		mg/Kg		110	70 - 130	13	35
m-Xylene & p-Xylene			0.200	0.2280		mg/Kg		114	70 - 130	12	35
o-Xylene			0.100	0.1113		mg/Kg		111	70 - 130	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 880-28227-A-4-A MS
Matrix: Solid
Analysis Batch: 53006

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53010

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.1289		mg/Kg		128	70 - 130		
Toluene	<0.00201	U	0.100	0.1203		mg/Kg		119	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

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

Lab Sample ID: 880-28227-A-4-A MS
Matrix: Solid
Analysis Batch: 53006

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53010

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.100	0.1121		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.201	0.2240		mg/Kg		112	70 - 130
o-Xylene	<0.00201	U	0.100	0.1087		mg/Kg		108	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*

Lab Sample ID: 880-28227-A-4-B MSD
Matrix: Solid
Analysis Batch: 53006

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53010

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.1349	F1	mg/Kg		136	70 - 130	5	35
Toluene	<0.00201	U	0.0990	0.1177		mg/Kg		118	70 - 130	2	35
Ethylbenzene	<0.00201	U	0.0990	0.1085		mg/Kg		110	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.2191		mg/Kg		111	70 - 130	2	35
o-Xylene	<0.00201	U	0.0990	0.1068		mg/Kg		108	70 - 130	2	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-53014/1-A
Matrix: Solid
Analysis Batch: 52999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53014

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		05/10/23 08:07	05/10/23 09:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/10/23 08:07	05/10/23 09:04	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/10/23 08:07	05/10/23 09:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*117*		*70 - 130*	*05/10/23 08:07*	*05/10/23 09:04*	*1*
o-Terphenyl	*150*	*S1+*	*70 - 130*	*05/10/23 08:07*	*05/10/23 09:04*	*1*

Lab Sample ID: LCS 880-53014/2-A
Matrix: Solid
Analysis Batch: 52999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53014

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	461.8	*-	mg/Kg		46	70 - 130
Diesel Range Organics (Over C10-C28)			1000	505.7	*-	mg/Kg		51	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

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

Lab Sample ID: LCS 880-53014/2-A
Matrix: Solid
Analysis Batch: 52999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53014

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	62	S1-	70 - 130
o-Terphenyl	74		70 - 130

Lab Sample ID: LCSD 880-53014/3-A
Matrix: Solid
Analysis Batch: 52999

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53014

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	448.4	*-	mg/Kg		45	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	405.8	*- *1	mg/Kg		41	70 - 130	22	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	50	S1-	70 - 130
o-Terphenyl	57	S1-	70 - 130

Lab Sample ID: 880-28227-A-1-E MS
Matrix: Solid
Analysis Batch: 52999

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1 F2 *-	997	<49.9	U F1	mg/Kg		4	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1 F2 *- *1	997	<49.9	U F1	mg/Kg		2	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	2	S1-	70 - 130
o-Terphenyl	0.4	S1-	70 - 130

Lab Sample ID: 880-28227-A-1-F MSD
Matrix: Solid
Analysis Batch: 52999

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53014

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	<49.9	U F1 F2 *-	999	1268	F2	mg/Kg		127	70 - 130	187	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1 F2 *- *1	999	1418	F1 F2	mg/Kg		142	70 - 130	196	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	170	S1+	70 - 130
o-Terphenyl	176	S1+	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

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

Lab Sample ID: MB 880-53162/1-A
Matrix: Solid
Analysis Batch: 53085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 53162

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		05/11/23 14:31	05/11/23 20:17	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/11/23 14:31	05/11/23 20:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/11/23 14:31	05/11/23 20:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*131*	*S1+*	*70 - 130*	*05/11/23 14:31*	*05/11/23 20:17*	*1*
o-Terphenyl	*152*	*S1+*	*70 - 130*	*05/11/23 14:31*	*05/11/23 20:17*	*1*

Lab Sample ID: LCS 880-53162/2-A
Matrix: Solid
Analysis Batch: 53085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 53162

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1084		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	776.1		mg/Kg		78	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

Lab Sample ID: LCSD 880-53162/3-A
Matrix: Solid
Analysis Batch: 53085

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 53162

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1052		mg/Kg		105	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	903.5		mg/Kg		90	70 - 130	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*117*		*70 - 130*

Lab Sample ID: 890-4640-A-1-D MS
Matrix: Solid
Analysis Batch: 53085

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53162

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	1043		mg/Kg		103	70 - 130		
Diesel Range Organics (Over C10-C28)	1380	F1	996	2042	F1	mg/Kg		66	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

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

Lab Sample ID: 890-4640-A-1-D MS
Matrix: Solid
Analysis Batch: 53085

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 53162

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	111		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: 890-4640-A-1-E MSD
Matrix: Solid
Analysis Batch: 53085

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 53162

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	<49.9	U	996	1055		mg/Kg		104	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1380	F1	996	2492		mg/Kg		111	70 - 130	20	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	109		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-53012/1-A
Matrix: Solid
Analysis Batch: 53026

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			05/10/23 10:32	1

Lab Sample ID: LCS 880-53012/2-A
Matrix: Solid
Analysis Batch: 53026

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	252.5		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-53012/3-A
Matrix: Solid
Analysis Batch: 53026

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	257.1		mg/Kg		103	90 - 110	2	20

Lab Sample ID: 880-28232-A-1-B MS
Matrix: Solid
Analysis Batch: 53026

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1150		249	1317	4	mg/Kg		69	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-28232-A-1-C MSD
Matrix: Solid
Analysis Batch: 53026

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1150		249	1324	4	mg/Kg		71	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

GC VOA

Analysis Batch: 53006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Total/NA	Solid	8021B	53010
890-4630-2	SW03	Total/NA	Solid	8021B	53010
MB 880-53010/5-A	Method Blank	Total/NA	Solid	8021B	53010
LCS 880-53010/1-A	Lab Control Sample	Total/NA	Solid	8021B	53010
LCSD 880-53010/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	53010
880-28227-A-4-A MS	Matrix Spike	Total/NA	Solid	8021B	53010
880-28227-A-4-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	53010

Prep Batch: 53010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Total/NA	Solid	5035	
890-4630-2	SW03	Total/NA	Solid	5035	
MB 880-53010/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-53010/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-53010/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-28227-A-4-A MS	Matrix Spike	Total/NA	Solid	5035	
880-28227-A-4-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 53063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Total/NA	Solid	Total BTEX	
890-4630-2	SW03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 52999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Total/NA	Solid	8015B NM	53014
MB 880-53014/1-A	Method Blank	Total/NA	Solid	8015B NM	53014
LCS 880-53014/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53014
LCSD 880-53014/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53014
880-28227-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	53014
880-28227-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53014

Prep Batch: 53014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Total/NA	Solid	8015NM Prep	
MB 880-53014/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53014/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53014/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-28227-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-28227-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 53074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Total/NA	Solid	8015 NM	
890-4630-2	SW03	Total/NA	Solid	8015 NM	

Analysis Batch: 53085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-2	SW03	Total/NA	Solid	8015B NM	53162

QC Association Summary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

GC Semi VOA (Continued)

Analysis Batch: 53085 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-53162/1-A	Method Blank	Total/NA	Solid	8015B NM	53162
LCS 880-53162/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	53162
LCSD 880-53162/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	53162
890-4640-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	53162
890-4640-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	53162

Prep Batch: 53162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-2	SW03	Total/NA	Solid	8015NM Prep	
MB 880-53162/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-53162/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-53162/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4640-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4640-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 53012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Soluble	Solid	DI Leach	
890-4630-2	SW03	Soluble	Solid	DI Leach	
MB 880-53012/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-53012/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-53012/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-28232-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-28232-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 53026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4630-1	FS05A	Soluble	Solid	300.0	53012
890-4630-2	SW03	Soluble	Solid	300.0	53012
MB 880-53012/1-A	Method Blank	Soluble	Solid	300.0	53012
LCS 880-53012/2-A	Lab Control Sample	Soluble	Solid	300.0	53012
LCSD 880-53012/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	53012
880-28232-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	53012
880-28232-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	53012

Lab Chronicle

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Client Sample ID: FS05A
Date Collected: 05/08/23 13:05
Date Received: 05/08/23 14:43

Lab Sample ID: 890-4630-1
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			4.99 g	5 mL	53010	05/10/23 08:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53006	05/10/23 13:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			53063	05/10/23 16:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			53074	05/10/23 19:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	53014	05/10/23 10:07	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52999	05/10/23 17:00	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	53012	05/10/23 10:52	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53026	05/10/23 11:45	SMC	EET MID

Client Sample ID: SW03
Date Collected: 05/08/23 13:10
Date Received: 05/08/23 14:43

Lab Sample ID: 890-4630-2
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			5.02 g	5 mL	53010	05/10/23 08:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	53006	05/10/23 13:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			53063	05/10/23 16:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			53074	05/10/23 19:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	53162	05/11/23 14:31	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	53085	05/12/23 04:52	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	53012	05/10/23 10:52	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	53026	05/10/23 11:49	SMC	EET MID

Laboratory References:
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

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	T104704400-22-25	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: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

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

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
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:

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

Sample Summary

Client: Ensolum
Project/Site: MuyWayno 7 State 1H

Job ID: 890-4630-1
SDG: 03C1558208

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4630-1	FS05A	Solid	05/08/23 13:05	05/08/23 14:43	1.5'
890-4630-2	SW03	Solid	05/08/23 13:10	05/08/23 14:43	0-1.5'

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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: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Amy Ruth
Company Name:	Ensolum, LLC	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:	9703194364 Email:	Email:	Amy.Ruth@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:	Muy Wayno 7 State 1H	Turn Around	☐ Routine ☒ Rush
Project Number:	03C1558208	Due Date:	24 hrs
Project Location:	32.1515, -103.922660	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Mariana O'Dell		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TNM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.0
Total Containers:		Corrected Temperature:	3.8

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	Pres. Code	Parameters: Chlorides	TPH	BTEX	Sample Comments
FS05A	S	5/8/23	13:05	1.5'	C	1		↓	↓	↓	AFE:
SW03	↓	↓	13:10	0-1.5'	↓	↓		↓	↓	↓	PA.2022 067560 EXP.01
											API:
											30-015-37700
											Tacoma Morrissey: tmorrissey@ensolum.com

890-4630 Chain of Custody

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Amanda Stutz	5/8/23 1443	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4630-1
SDG Number: 03C1558208

Login Number: 4630
List Number: 1
Creator: Stutzman, Amanda

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.	N/A	Refer to Job Narrative for details.
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: 890-4630-1
SDG Number: 03C1558208

Login Number: 4630
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/10/23 11:08 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 8/14/2023 8:44:25 PM

JOB DESCRIPTION

Muy Wayno 7 State 1H
SDG NUMBER 03C15588208

JOB NUMBER

890-5005-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

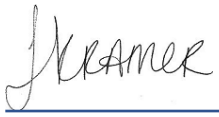
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Laboratory Job ID: 890-5005-1
SDG: 03C15588208

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-5005-1
Project/Site: Muy Wayno 7 State 1H SDG: 03C15588208

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control 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: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

Job ID: 890-5005-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-5005-1

Receipt
The sample was received on 7/28/2023 1:40 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SW04 (890-5005-1).

GC VOA
Method 8021B: The continuing calibration verification (CCV) associated with batch 880-59420 recovered above the upper control limit for m-Xylene & p-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-59420/2).

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 surrogate recovery for the blank associated with preparation batch 880-59650 and analytical batch 880-60035 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SW04 (890-5005-1), (CCV 880-60035/20), (CCV 880-60035/5), (LCS 880-59650/2-A), (LCSD 880-59650/3-A), (880-31363-A-1-C), (880-31363-A-1-D MS) and (880-31363-A-1-E MSD). Evidence of matrix interferences is not obvious.

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: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

Client Sample ID: SW04

Date Collected: 07/28/23 11:10
Date Received: 07/28/23 13:40
Sample Depth: 0 - 1.5

Lab Sample ID: 890-5005-1

Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		08/07/23 09:56	08/07/23 16:25	1
Toluene	<0.00202	U	0.00202		mg/Kg		08/07/23 09:56	08/07/23 16:25	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		08/07/23 09:56	08/07/23 16:25	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		08/07/23 09:56	08/07/23 16:25	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		08/07/23 09:56	08/07/23 16:25	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		08/07/23 09:56	08/07/23 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*08/07/23 09:56*	*08/07/23 16:25*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*08/07/23 09:56*	*08/07/23 16:25*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			08/08/23 10:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4		mg/Kg			08/14/23 20:51	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.4	U	50.4		mg/Kg		08/08/23 15:16	08/13/23 13:42	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4		mg/Kg		08/08/23 15:16	08/13/23 13:42	1
OII Range Organics (Over C28-C36)	<50.4	U	50.4		mg/Kg		08/08/23 15:16	08/13/23 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*151*	*S1+*	*70 - 130*	*08/08/23 15:16*	*08/13/23 13:42*	*1*
o-Terphenyl	*137*	*S1+*	*70 - 130*	*08/08/23 15:16*	*08/13/23 13:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**76.5**		5.03		mg/Kg			08/01/23 19:19	1

Surrogate Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

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)
890-5005-1	SW04	82	90
890-5005-1 MS	SW04	94	110
890-5005-1 MSD	SW04	103	96
LCS 880-59470/1-A	Lab Control Sample	94	93
LCSD 880-59470/2-A	Lab Control Sample Dup	93	96
MB 880-59470/5-A	Method Blank	109	122

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)
880-31363-A-1-D MS	Matrix Spike	162 S1+	122
880-31363-A-1-E MSD	Matrix Spike Duplicate	158 S1+	121
890-5005-1	SW04	151 S1+	137 S1+
LCS 880-59650/2-A	Lab Control Sample	160 S1+	146 S1+
LCSD 880-59650/3-A	Lab Control Sample Dup	163 S1+	144 S1+
MB 880-59650/1-A	Method Blank	163 S1+	150 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-59470/5-A
Matrix: Solid
Analysis Batch: 59420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 59470

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/07/23 09:56	08/07/23 15:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/07/23 09:56	08/07/23 15:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/07/23 09:56	08/07/23 15:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/07/23 09:56	08/07/23 15:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/07/23 09:56	08/07/23 15:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/07/23 09:56	08/07/23 15:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*08/07/23 09:56*	*08/07/23 15:55*	*1*
1,4-Difluorobenzene (Surr)	*122*		*70 - 130*	*08/07/23 09:56*	*08/07/23 15:55*	*1*

Lab Sample ID: LCS 880-59470/1-A
Matrix: Solid
Analysis Batch: 59420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 59470

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1112		mg/Kg		111	70 - 130		
Toluene			0.100	0.1109		mg/Kg		111	70 - 130		
Ethylbenzene			0.100	0.1044		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2165		mg/Kg		108	70 - 130		
o-Xylene			0.100	0.1007		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-59470/2-A
Matrix: Solid
Analysis Batch: 59420

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 59470

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1147		mg/Kg		115	70 - 130	3	35
Toluene			0.100	0.1102		mg/Kg		110	70 - 130	1	35
Ethylbenzene			0.100	0.09617		mg/Kg		96	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1966		mg/Kg		98	70 - 130	10	35
o-Xylene			0.100	0.1022		mg/Kg		102	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 890-5005-1 MS
Matrix: Solid
Analysis Batch: 59420

Client Sample ID: SW04
Prep Type: Total/NA
Prep Batch: 59470

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U	0.0996	0.1203		mg/Kg		121	70 - 130		
Toluene	<0.00202	U	0.0996	0.1193		mg/Kg		120	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

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

Lab Sample ID: 890-5005-1 MS
Matrix: Solid
Analysis Batch: 59420

Client Sample ID: SW04
Prep Type: Total/NA
Prep Batch: 59470

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U	0.0996	0.1106		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.199	0.2391		mg/Kg		120	70 - 130
o-Xylene	<0.00202	U	0.0996	0.08298		mg/Kg		83	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-5005-1 MSD
Matrix: Solid
Analysis Batch: 59420

Client Sample ID: SW04
Prep Type: Total/NA
Prep Batch: 59470

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.100	0.1153		mg/Kg		115	70 - 130	4	35
Toluene	<0.00202	U	0.100	0.1093		mg/Kg		109	70 - 130	9	35
Ethylbenzene	<0.00202	U	0.100	0.1084		mg/Kg		108	70 - 130	2	35
m-Xylene & p-Xylene	<0.00403	U	0.200	0.2306		mg/Kg		115	70 - 130	4	35
o-Xylene	<0.00202	U	0.100	0.1077		mg/Kg		108	70 - 130	26	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

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

Lab Sample ID: MB 880-59650/1-A
Matrix: Solid
Analysis Batch: 60035

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 59650

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		08/08/23 15:15	08/13/23 08:29	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/08/23 15:15	08/13/23 08:29	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/08/23 15:15	08/13/23 08:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*163*	*S1+*	*70 - 130*	*08/08/23 15:15*	*08/13/23 08:29*	*1*
o-Terphenyl	*150*	*S1+*	*70 - 130*	*08/08/23 15:15*	*08/13/23 08:29*	*1*

Lab Sample ID: LCS 880-59650/2-A
Matrix: Solid
Analysis Batch: 60035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 59650

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1121		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1125		mg/Kg		113	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

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

Lab Sample ID: LCS 880-59650/2-A
Matrix: Solid
Analysis Batch: 60035

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 59650

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	160	S1+	70 - 130
o-Terphenyl	146	S1+	70 - 130

Lab Sample ID: LCSD 880-59650/3-A
Matrix: Solid
Analysis Batch: 60035

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 59650

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1140		mg/Kg		114	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	1126		mg/Kg		113	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	163	S1+	70 - 130
o-Terphenyl	144	S1+	70 - 130

Lab Sample ID: 880-31363-A-1-D MS
Matrix: Solid
Analysis Batch: 60035

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 59650

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	998	1036		mg/Kg		101	70 - 130
Diesel Range Organics (Over C10-C28)	292		998	1380		mg/Kg		109	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	162	S1+	70 - 130
o-Terphenyl	122		70 - 130

Lab Sample ID: 880-31363-A-1-E MSD
Matrix: Solid
Analysis Batch: 60035

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 59650

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	<50.2	U	998	998.7		mg/Kg		98	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	292		998	1348		mg/Kg		106	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	158	S1+	70 - 130
o-Terphenyl	121		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-58972/1-A
Matrix: Solid
Analysis Batch: 59018

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			08/01/23 17:00	1

Lab Sample ID: LCS 880-58972/2-A
Matrix: Solid
Analysis Batch: 59018

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	238.4		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-58972/3-A
Matrix: Solid
Analysis Batch: 59018

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	240.0		mg/Kg		96	90 - 110	1	20

Lab Sample ID: 880-31470-A-1-B MS
Matrix: Solid
Analysis Batch: 59018

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	518		249	757.7		mg/Kg		96	90 - 110		

Lab Sample ID: 880-31470-A-1-C MSD
Matrix: Solid
Analysis Batch: 59018

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	518		249	757.1		mg/Kg		96	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

GC VOA

Analysis Batch: 59420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Total/NA	Solid	8021B	59470
MB 880-59470/5-A	Method Blank	Total/NA	Solid	8021B	59470
LCS 880-59470/1-A	Lab Control Sample	Total/NA	Solid	8021B	59470
LCSD 880-59470/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	59470
890-5005-1 MS	SW04	Total/NA	Solid	8021B	59470
890-5005-1 MSD	SW04	Total/NA	Solid	8021B	59470

Prep Batch: 59470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Total/NA	Solid	5035	
MB 880-59470/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-59470/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-59470/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-5005-1 MS	SW04	Total/NA	Solid	5035	
890-5005-1 MSD	SW04	Total/NA	Solid	5035	

Analysis Batch: 59615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 59650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Total/NA	Solid	8015NM Prep	
MB 880-59650/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-59650/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-59650/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-31363-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-31363-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 60035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Total/NA	Solid	8015B NM	59650
MB 880-59650/1-A	Method Blank	Total/NA	Solid	8015B NM	59650
LCS 880-59650/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	59650
LCSD 880-59650/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	59650
880-31363-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	59650
880-31363-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	59650

Analysis Batch: 60207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 58972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Soluble	Solid	DI Leach	
MB 880-58972/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-58972/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-58972/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

HPLC/IC (Continued)

Leach Batch: 58972 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-31470-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-31470-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 59018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5005-1	SW04	Soluble	Solid	300.0	58972
MB 880-58972/1-A	Method Blank	Soluble	Solid	300.0	58972
LCS 880-58972/2-A	Lab Control Sample	Soluble	Solid	300.0	58972
LCSD 880-58972/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	58972
880-31470-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	58972
880-31470-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	58972

Lab Chronicle

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

Client Sample ID: SW04

Date Collected: 07/28/23 11:10
Date Received: 07/28/23 13:40

Lab Sample ID: 890-5005-1

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			4.96 g	5 mL	59470	08/07/23 09:56	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	59420	08/07/23 16:25	SM	EET MID
Total/NA	Analysis	Total BTEX		1			59615	08/08/23 10:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			60207	08/14/23 20:51	SM	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	59650	08/08/23 15:16	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	60035	08/13/23 13:42	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	58972	08/01/23 11:00	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	59018	08/01/23 19:19	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

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	T104704400-23-26	06-30-24

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: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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:

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

Sample Summary

Client: Ensolum
Project/Site: Muy Wayno 7 State 1H

Job ID: 890-5005-1
SDG: 03C15588208

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5005-1	SW04	Solid	07/28/23 11:10	07/28/23 13:40	0 - 1.5

eurofins | Environment Testing Xenco

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: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Amy Ruth
Company Name:	Ensolum LLC	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:	337-257-8307 Email:		amy.ruth@exxonmobile.com,

Work Order Comments

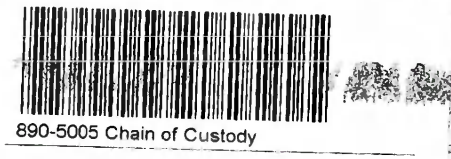
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Muy Wayno 7 State 1H	Turn Around	
Project Number:	03C1588205	☒ Routine ☐ Rush	
Project Location:	32.1511S, -103.9221dg	Due Date:	
Sampler's Name:	Ryan Hayes	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TWN007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	1.2
Total Containers:		Corrected Temperature:	1.0

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: BTEX	TPH	Cl-
SW04	S	7/28/23	1110	0-1.5'	C	1		—	—	



Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
: HC HNO_3: HN
0_4: H_2 NaOH: Na
PO_4: HP
HSO_4: NABIS
S_2O_3: $NaSO_3$
Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

API: 30-015-37700
AFE PA.2022.06756.EXP.01

cc: tmorrissey@ensolum.com
bbel1@ensolum.com
wwechert@ensolum.com

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		7.28.23 1340	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-5005-1
SDG Number: 03C15588208

Login Number: 5005
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.	N/A	Refer to Job Narrative for details.
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: 890-5005-1
SDG Number: 03C15588208

Login Number: 5005
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/31/23 01:07 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	

ENSOLUM

APPENDIX C

NMOCD Notifications

From: Collins, Melanie
To: ocd.enviro (ocd.enviro@emnrd.nm.gov); Hamlet, Robert, EMNRD (Robert.Hamlet@emnrd.nm.gov); Bratcher, Michael, EMNRD (mike.bratcher@emnrd.nm.gov); spills@slo.state.nm.us
Cc: DelawareSpills /SM; Green, Garrett J; Ben Belill
Subject: XTO - Sampling Notification (Week of 7/24/23 - 7/28/23)
Date: Wednesday, July 19, 2023 5:00:47 PM
Attachments: image001.png

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the sites listed below for the week of July 24, 2023.

Wednesday 7/26/23

- PLU 18 Brushy Draw West CTB / nAPP2317055972

Friday 7/27/23

- Corral Canyon Expansion / NRM2021833146
- Muy Wayno 7H / 2RP-5023 NMAP1829649787 (SLO)

Thank you,

Melanie Collins

XTO ENERGY

Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

ENSOLUM

APPENDIX D

December 31, 2018 *Deferral Request*

LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 103
Midland, Texas 79705
432.704.5178

December 31, 2018

Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

RE: Deferral Request
Muy Wayno 7 State 1H
Remediation Permit Number 2RP-5023
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following letter report detailing excavation of impacted soil and confirmation soil sampling activities at the Muy Wayno 7 State 1H tank battery (Site) located in Unit C, Section 07, Township 25 South, Range 30 East, in Eddy, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impact to soil after 25 barrels (bbls) of crude oil and 35.2 bbls of produced water were released from the tank battery. The majority of the released fluids were contained within the lined tank battery containment berm. A light mist impacted the surface soil northwest of the tank battery. The release was discovered on October 3, 2018. Vacuum trucks were dispatched to the Site and used to recover the standing fluid; approximately 25 bbls of crude oil and 35 bbls of produced water were recovered from the lined containment and returned to the tanks. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on October 18, 2018 and was assigned Remediation Permit (RP) Number 2RP-5023 (Attachment 1).

BACKGROUND

The release occurred after August 14, 2018; therefore, LTE determined remediation action levels by applying 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). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well with depth to water data is C 02371, located approximately 3.42 miles southwest of the Site, with a depth to groundwater of 60 feet and a total depth of 200 feet. The water well is approximately 136 feet lower in elevation than the Site. The closest significant watercourse to the Site is an unnamed dry wash located approximately 1,125 feet south 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. Based on these criteria, the following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and 20,000 mg/kg chloride.

EXCAVATION AND SOIL SAMPLING ACTVITIES

On November 3, 2018, LTE personnel inspected the Site to evaluate the release extent. The release within the lined containment was cleaned up using vacuum trucks during initial response activities. Surface hydrocarbon staining was observed in the misted release area northwest of the tank battery. The release extent was mapped using a handheld Global Positing System (GPS) unit and is depicted on Figure 2.

On December 4, 2018, LTE personnel returned to the Site to oversee excavation of impacted soil as indicated by visual surface staining in the misted release area northwest of the tank battery. Excavation activities commenced and concluded on December 4, 2018. Impacted soil was excavated from the release area to a depth of 0.5 feet to 1.5 feet bgs. To delineate impacts to soil and direct excavation activities, LTE screened soil using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. Following removal of impacted soil, LTE collected 5-point composite soil samples from the floor of the excavation. Composite soil samples FS01 through FS03 were collected from the floor of the excavation from depths of 0.5 feet to 1.5 feet bgs. The 5-point composite samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thorough mixing.

Potholes were advanced at two locations (PH01 and PH02) within the surface mist release area to confirm the lateral and vertical extent of soil impact. Soil was field screened in each pothole using a PID and Hach® chloride QuanTab® test strips. The potholes were advanced to a maximum depth of 1-foot bgs based on field screening results. Soil samples PH01A and PH01B were collected from pothole PH01 from the surface and 0.5-feet bgs, respectively. Soil samples PH02A and PH02B were collected from pothole PH02 from depths of 0.5-feet bgs and 1-foot bgs, respectively. One discrete delineation soil sample (SW01) was collected at a depth of 1-foot bgs from the southern extent of the excavation adjacent to the tank battery containment berm to assess the lateral extent of soil impacts. The soil sample locations are depicted on Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

The excavation measured approximately 600 square feet in area with a depth ranging from 0.5 feet to 1.5 feet bgs. The horizontal extent of the excavation is illustrated on Figure 2. Approximately 28 cubic yards of impacted soil were removed from the excavation. The impacted soil will be transported and properly disposed of at the R360 Landfill Facility or Lea Land Landfill Facility, in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results for the excavation floor samples (FS01, FS02, and FS03) and pothole samples (PH01A, PH01B, PH02A, and PH02B) indicated that BTEX, TPH, and chloride concentrations were compliant with the NMOCD Table 1 closure criteria and no further excavation was required in these areas. Laboratory analytical results for soil sample SW01 indicated that the GRO/DRO concentration exceeded the NMOCD Table 1 closure criteria of 1,000 mg/kg at a concentration of 1,380 mg/kg. Sidewall sample SW01 was collected at 1-foot bgs from the southern excavation extent. Further excavation to the south was limited by the lined tank battery containment berm. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site lined containments. This XTO safety policy is established to protect workers and to reduce the likelihood of compromising the foundation of the lined containment. This policy was enforced along the southern sidewall of the excavation where impacted soil was identified within two feet of the lined tank battery containment. The excavation was advanced to two feet from the lined containment by mechanical and hand digging methods to remove as much impacted soil as possible. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included as Attachment 2.

DEFERRAL REQUEST

Approximately 28 cubic yards of impacted soil were excavated from the Site; however, residual impacted soil was left in place for compliance with the XTO safety policy regarding earth-moving activities within two feet of active tank batteries and lined containments. Laboratory analytical results for excavation sidewall sample SW01 indicated that soil with a GRO/DRO concentration exceeding the NMOCD Table 1 closure criteria was left in place within two feet of the lined tank battery containment. An estimated 20 cubic yards of impacted soil remain in place, assuming a maximum 2-foot depth based on excavation confirmation samples collected from 1.5 feet bgs that were compliant with the NMOCD Table 1 closure criteria. XTO requests to backfill the existing excavation and complete delineation and remediation during any future major well pad construction/alteration or final plugging and abandonment, whichever occurs first. LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The majority of the release occurred within the lined tank battery containment berm and free-standing fluids were recovered during initial response activities. No saturated soil remains in place. The release is delineated vertically to 1.5 feet bgs based on excavation confirmation samples and laterally by excavation and pothole confirmation soil samples and the mapped release extent.

Upon approval of the deferral request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1. A photographic log of the Site is included as Attachment 3.

If you have any questions or comments, please do not hesitate to contact Ms. Adrian Baker at (432) 887-1255 or abaker@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Adrian Baker
Project Geologist

Ashley L. Ager, M.S., P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Ryan Mann, SLO

Attachments:

Figure 1	Site Location Map
Figure 2	Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Initial/Final NMOCD Form C-141 (2RP-5023)
Attachment 2	Laboratory Analytical Reports
Attachment 3	Photographic Log

FIGURES

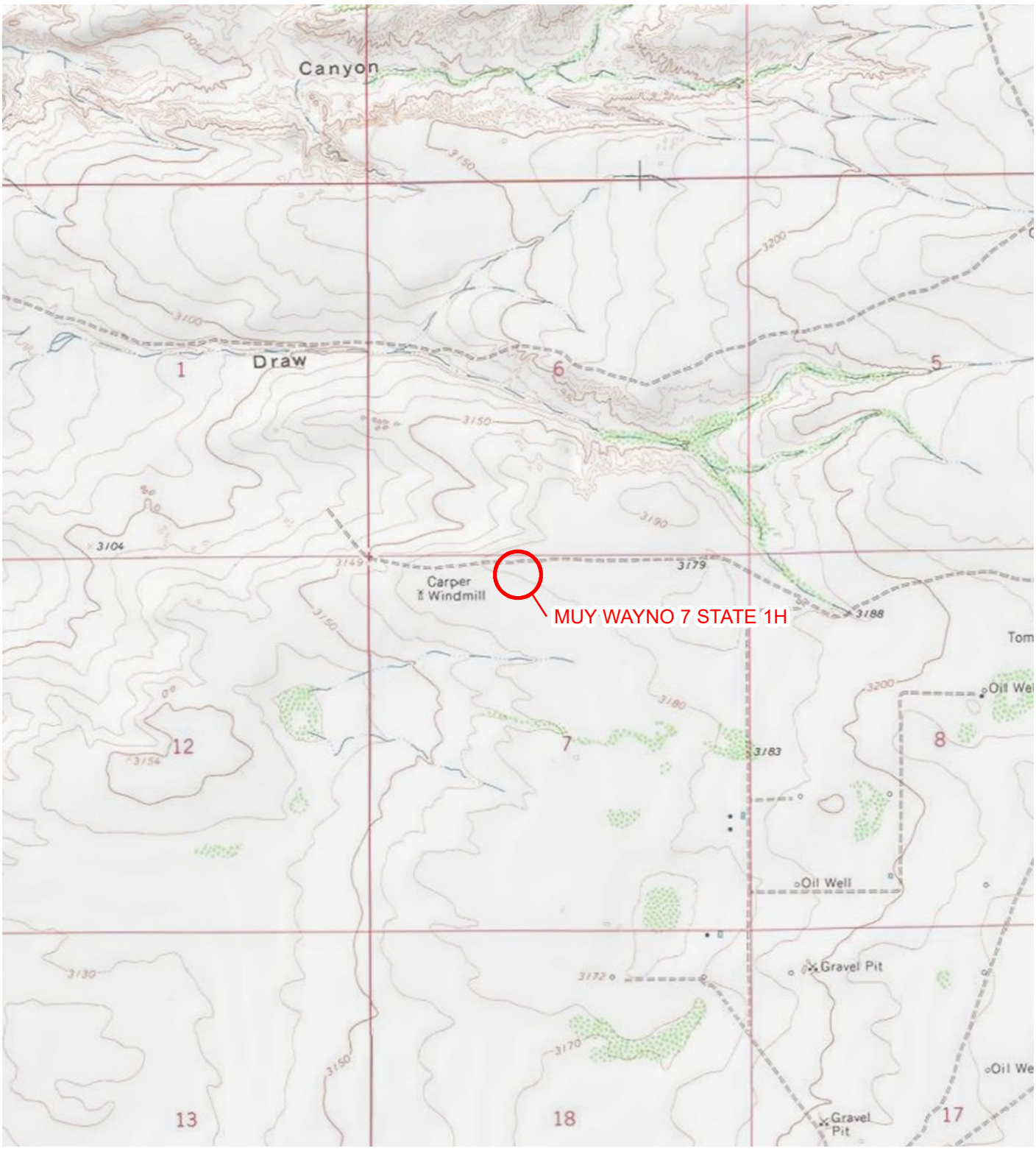


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

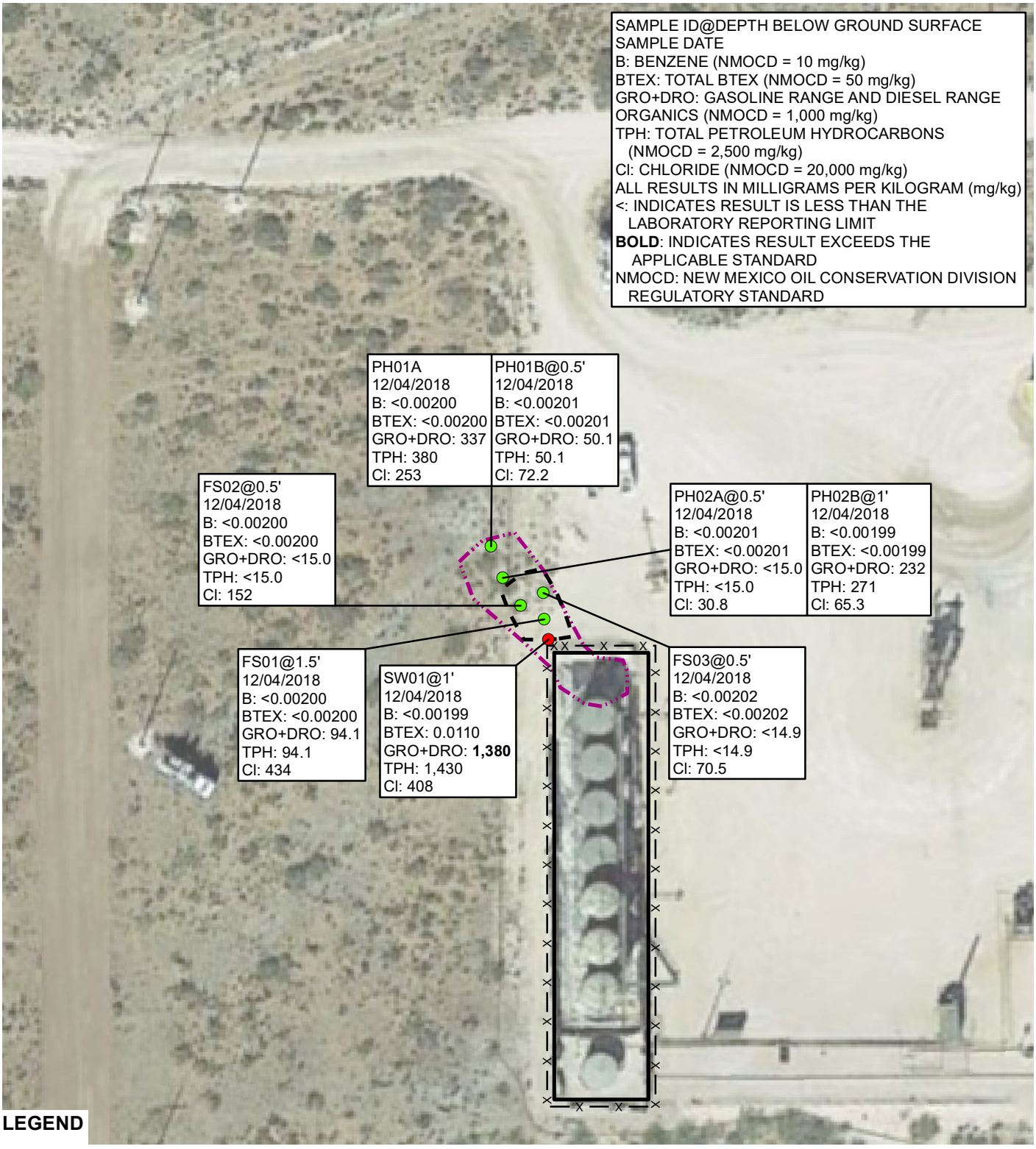
N

NEW MEXICO

NOTE: REMEDIATION PERMIT
NUMBER 2RP-5023

FIGURE 1
SITE LOCATION MAP
MUY WAYNO 7 STATE 1H
UNIT C SEC 7 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918171_MUY WAYNO 7 STATE 1H\012918171_FIG01_SL_2018.mxd



NOTE: REMEDIATION PERMIT NUMBER 2RP-5023

FIGURE 2
SOIL SAMPLE LOCATIONS
MUY WAYNO 7 STATE 1H
UNIT C SEC 7 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012918171_MUY WAYNO 7 STATE 1H\012918171_FIG02_SITE_2018_5023.mxd

TABLE

TABLE 1
SOIL ANALYTICAL RESULTS

MUY WAYNO 7 STATE 1H
REMEDIATION PERMIT NUMBER 2RP-5023
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS01	1.5	12/04/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	94.1	<15.0	94.1	94.1	434
FS02	0.5	12/04/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	152
FS03	0.5	12/04/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	<14.9	70.5
PH01A	Surface	12/04/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	337	42.6	337	380	253
PH01B	0.5	12/04/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	50.1	<15.0	50.1	50.1	72.2
PH02A	0.5	12/04/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	30.8
PH02B	1	12/04/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	232	38.5	232	271	65.3
SW01	1	12/04/2018	<0.00199	<0.00199	<0.00199	0.0110	0.0110	44.8	1,340	46.9	**1,380**	1,430	408
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000

Notes:
bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
mg/kg - milligrams per kilogram
NE - not established
NMOCD - New Mexico Oil Conservation Division
DRO - diesel range organics
GRO - gasoline range organics
ORO - oil range organics
TPH - total petroleum hydrocarbons
< - indicates result is below laboratory reporting limits
Bold - indicates result exceeds the applicable regulatory standard

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-5023)

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	NMAP1829649787
District RP	2RP-5023
Facility ID	N/A
Application ID	pMAP1829649280

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NMAP1829649787
Contact mailing address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

Location of Release Source

Latitude 32.15115 Longitude -103.92266
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Muy Wayno 7 State 1H	Site Type Tank Battery
Date Release 10/3/2018	API# 30-015-37700

Unit Letter	Section	Township	Range	County
C	7	25S	30E	Eddy

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

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) 25	Volume Recovered (bbls) 25
☒ Produced Water	Volume Released (bbls) 35.2	Volume Recovered (bbls) 35
	Is the concentration of dissolved chloride 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: Approximately 25 BO and 35 BW was released from tank battery inside of impervious lined containment with light mist outside of containment. All contained fluid was recovered by vacuum truck and returned to tanks.

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1829649787
District RP	2RP-5023
Facility ID	N/A
Application ID	pMAP1829649280

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? An unauthorized release of a volume, excluding gases, of 25 barrels or more.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Kyle Littrell to Mike Bratcher and Maria Pruett (NMOCD) and Ryan Mann and Mark Naranjo (SLO), 10/3/2018, 3:11 PM, by email.

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: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 10/18/2018

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Date: 10/23/18

State of New Mexico
Oil Conservation Division

Incident ID	NMAP1829649787
District RP	2RP-5023
Facility ID	N/A
Application ID	pMAP1829649280

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?	≥100 (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 State of New Mexico
Page 4 Oil Conservation Division

Incident ID	NMAP1829649787
District RP	2RP-5023
Facility ID	N/A
Application ID	pMAP1829649280

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: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 10/18/2018

email: Kyle_Littrell@xtoenery.com Telephone: 432-221-7331

OCD Only

Received by: Date:

Form C-141 State of New Mexico
Page 5 Oil Conservation Division

Incident ID	
District RP	2RP-5023
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 12/28/2018

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Date:

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

Signature: Date:

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS

Analytical Report 607741

for

LT Environmental, Inc.

Project Manager: Adrian Baker

Muy Wayno

12-DEC-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

12-DEC-18

Project Manager: **Adrian Baker**
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, CO 80003

Reference: XENCO Report No(s): **607741**
Muy Wayno
Project Address: Eddy County

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 607741. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 607741 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01 A	S	12-04-18 11:00	0 ft	607741-001
PH01 B	S	12-04-18 11:05	.5 ft	607741-002
PH02 A	S	12-04-18 11:30	.5 ft	607741-003
PH02 B	S	12-04-18 11:45	1 ft	607741-004
FS01	S	12-04-18 13:25	1.5 ft	607741-005
FS02	S	12-04-18 12:55	.5 ft	607741-006
FS03	S	12-04-18 13:00	.5 ft	607741-007
SW01	S	12-04-18 13:45	1 ft	607741-008

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Muy Wayno

Project ID:
Work Order Number(s): *607741*

Report Date: *12-DEC-18*
Date Received: *12/06/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3072349 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3072361 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 607741

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id:
Contact: Adrian Baker
Project Location: Eddy County

Date Received in Lab: Thu Dec-06-18 11:15 am
Report Date: 12-DEC-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	607741-001		607741-002		607741-003		607741-004		607741-005		607741-006	
	Field Id:	PH01 A		PH01 B		PH02 A		PH02 B		FS01		FS02	
	Depth:	0- ft		.5- ft		.5- ft		1- ft		1.5- ft		.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-04-18 11:00		Dec-04-18 11:05		Dec-04-18 11:30		Dec-04-18 11:45		Dec-04-18 13:25		Dec-04-18 12:55	
BTEX by EPA 8021B	***Extracted:***	Dec-10-18 09:30		Dec-10-18 09:30		Dec-10-18 09:30		Dec-10-18 09:30		Dec-10-18 09:30		Dec-10-18 16:00	
	Analyzed:	Dec-10-18 20:41		Dec-10-18 21:00		Dec-10-18 21:19		Dec-10-18 21:38		Dec-10-18 21:57		Dec-11-18 05:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00399	0.00399	<0.00402	0.00402	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	<0.00401	0.00401
o-Xylene		<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200
Inorganic Anions by EPA 300	***Extracted:***	Dec-07-18 10:00		Dec-07-18 16:00		Dec-07-18 16:00		Dec-07-18 16:00		Dec-07-18 16:00		Dec-07-18 16:00	
	Analyzed:	Dec-08-18 03:01		Dec-07-18 18:37		Dec-07-18 18:44		Dec-07-18 18:50		Dec-07-18 19:08		Dec-07-18 19:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		253	5.01	72.2	4.96	30.8	4.98	65.3	4.99	434	4.99	152	4.97
TPH by SW8015 Mod	***Extracted:***	Dec-07-18 08:00		Dec-07-18 08:00		Dec-07-18 08:00		Dec-07-18 08:00		Dec-07-18 08:00		Dec-07-18 08:00	
	Analyzed:	Dec-07-18 16:19		Dec-07-18 16:39		Dec-07-18 16:58		Dec-07-18 17:17		Dec-07-18 17:36		Dec-07-18 17:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		337	15.0	50.1	15.0	<15.0	15.0	232	15.0	94.1	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		42.6	15.0	<15.0	15.0	<15.0	15.0	38.5	15.0	<15.0	15.0	<15.0	15.0
Total TPH		380	15.0	50.1	15.0	<15.0	15.0	271	15.0	94.1	15.0	<15.0	15.0

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Final 1.002

Certificate of Analysis Summary 607741

LT Environmental, Inc., Arvada, CO

Project Name: Muy Wayno

Project Id:
Contact: Adrian Baker
Project Location: Eddy County

Date Received in Lab: Thu Dec-06-18 11:15 am
Report Date: 12-DEC-18
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	607741-007		607741-008					
	Field Id:	FS03		SW01					
	Depth:	.5- ft		1- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-04-18 13:00		Dec-04-18 13:45					
BTEX by EPA 8021B	***Extracted:***	Dec-10-18 16:00		Dec-10-18 16:00					
	Analyzed:	Dec-11-18 05:30		Dec-11-18 05:49					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00202	0.00202	<0.00199	0.00199				
Toluene		<0.00202	0.00202	<0.00199	0.00199				
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199				
m,p-Xylenes		<0.00403	0.00403	<0.00398	0.00398				
o-Xylene		<0.00202	0.00202	0.0110	0.00199				
Total Xylenes		<0.00202	0.00202	0.0110	0.00199				
Total BTEX		<0.00202	0.00202	0.0110	0.00199				
Inorganic Anions by EPA 300	***Extracted:***	Dec-07-18 16:00		Dec-07-18 16:00					
	Analyzed:	Dec-07-18 19:33		Dec-07-18 19:39					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		70.5	4.96	408	4.98				
TPH by SW8015 Mod	***Extracted:***	Dec-07-18 08:00		Dec-07-18 08:00					
	Analyzed:	Dec-07-18 18:15		Dec-07-18 18:35					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	44.8	15.0				
Diesel Range Organics (DRO)		<14.9	14.9	1340	15.0				
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	46.9	15.0				
Total TPH		<14.9	14.9	1430	15.0				

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**PH01 A**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-001	Date Collected:	12.04.18 11.00	Sample Depth:	0 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 10.00	Basis:	Wet Weight
Seq Number:	3072203				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**253**	5.01	mg/kg	12.08.18 03.01		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.07.18 16.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	**337**	15.0	mg/kg	12.07.18 16.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**42.6**	15.0	mg/kg	12.07.18 16.19		1
Total TPH	PHC635	**380**	15.0	mg/kg	12.07.18 16.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	81	%	70-135	12.07.18 16.19	
o-Terphenyl	84-15-1	86	%	70-135	12.07.18 16.19	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**PH01 A**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-001	Date Collected:	12.04.18 11.00	Sample Depth:	0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 09.30	Basis:	Wet Weight
Seq Number:	3072349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.10.18 20.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.10.18 20.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.10.18 20.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.10.18 20.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.10.18 20.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.10.18 20.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.10.18 20.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.10.18 20.41	
4-Bromofluorobenzene	460-00-4	80	%	70-130	12.10.18 20.41	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**PH01 B**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-002	Date Collected:	12.04.18 11.05	Sample Depth:	.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**72.2**	4.96	mg/kg	12.07.18 18.37		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.07.18 16.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	**50.1**	15.0	mg/kg	12.07.18 16.39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.07.18 16.39	U	1
Total TPH	PHC635	**50.1**	15.0	mg/kg	12.07.18 16.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	12.07.18 16.39	
o-Terphenyl	84-15-1	91	%	70-135	12.07.18 16.39	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**PH01 B**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-002	Date Collected:	12.04.18 11.05	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 09.30	Basis:	Wet Weight
Seq Number:	3072349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.10.18 21.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.10.18 21.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.10.18 21.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.10.18 21.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.10.18 21.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.10.18 21.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.10.18 21.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	79	%	70-130	12.10.18 21.00	
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.10.18 21.00	

Certificate of Analytical Results 607741

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Muy Wayno

Sample Id:	**PH02 A**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-003	Date Collected:	12.04.18 11.30	Sample Depth:	.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**30.8**	4.98	mg/kg	12.07.18 18.44		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.07.18 16.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.07.18 16.58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.07.18 16.58	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.07.18 16.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.07.18 16.58	
o-Terphenyl	84-15-1	86	%	70-135	12.07.18 16.58	

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LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**PH02 A**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-003	Date Collected:	12.04.18 11.30	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 09.30	Basis:	Wet Weight
Seq Number:	3072349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.10.18 21.19	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.10.18 21.19	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.10.18 21.19	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.10.18 21.19	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.10.18 21.19	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.10.18 21.19	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.10.18 21.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	79	%	70-130	12.10.18 21.19	
1,4-Difluorobenzene	540-36-3	108	%	70-130	12.10.18 21.19	

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Muy Wayno

Sample Id:	**PH02 B**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-004	Date Collected:	12.04.18 11.45	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.3**	4.99	mg/kg	12.07.18 18.50		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.07.18 17.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	**232**	15.0	mg/kg	12.07.18 17.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**38.5**	15.0	mg/kg	12.07.18 17.17		1
Total TPH	PHC635	**271**	15.0	mg/kg	12.07.18 17.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.07.18 17.17	
o-Terphenyl	84-15-1	89	%	70-135	12.07.18 17.17	

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Sample Id:	**PH02 B**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-004	Date Collected:	12.04.18 11.45	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 09.30	Basis:	Wet Weight
Seq Number:	3072349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.10.18 21.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.10.18 21.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.10.18 21.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.10.18 21.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.10.18 21.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.10.18 21.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.10.18 21.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	12.10.18 21.38	
4-Bromofluorobenzene	460-00-4	80	%	70-130	12.10.18 21.38	

Certificate of Analytical Results 607741

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Sample Id:	**FS01**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-005	Date Collected:	12.04.18 13.25	Sample Depth:	1.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**434**	4.99	mg/kg	12.07.18 19.08		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.07.18 17.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	**94.1**	15.0	mg/kg	12.07.18 17.36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.07.18 17.36	U	1
Total TPH	PHC635	**94.1**	15.0	mg/kg	12.07.18 17.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-135	12.07.18 17.36	
o-Terphenyl	84-15-1	90	%	70-135	12.07.18 17.36	

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Muy Wayno

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-005	Date Collected:	12.04.18 13.25	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 09.30	Basis:	Wet Weight
Seq Number:	3072349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.10.18 21.57	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.10.18 21.57	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.10.18 21.57	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.10.18 21.57	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.10.18 21.57	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.10.18 21.57	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.10.18 21.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	79	%	70-130	12.10.18 21.57	
1,4-Difluorobenzene	540-36-3	109	%	70-130	12.10.18 21.57	

Certificate of Analytical Results 607741

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Muy Wayno

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-006	Date Collected:	12.04.18 12.55	Sample Depth:	.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**152**	4.97	mg/kg	12.07.18 19.14		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	12.07.18 17.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	12.07.18 17.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	12.07.18 17.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	12.07.18 17.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.07.18 17.56	
o-Terphenyl	84-15-1	88	%	70-135	12.07.18 17.56	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-006	Date Collected:	12.04.18 12.55	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 16.00	Basis:	Wet Weight
Seq Number:	3072361				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.11.18 05.11	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.11.18 05.11	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.11.18 05.11	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.11.18 05.11	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.11.18 05.11	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.11.18 05.11	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.11.18 05.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.11.18 05.11	
4-Bromofluorobenzene	460-00-4	84	%	70-130	12.11.18 05.11	

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Muy Wayno

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-007	Date Collected:	12.04.18 13.00	Sample Depth:	.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**70.5**	4.96	mg/kg	12.07.18 19.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	12.07.18 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	12.07.18 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	12.07.18 18.15	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	12.07.18 18.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	12.07.18 18.15	
o-Terphenyl	84-15-1	87	%	70-135	12.07.18 18.15	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-007	Date Collected:	12.04.18 13.00	Sample Depth:	.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 16.00	Basis:	Wet Weight
Seq Number:	3072361				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.11.18 05.30	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.11.18 05.30	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.11.18 05.30	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.11.18 05.30	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.11.18 05.30	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.11.18 05.30	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.11.18 05.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	80	%	70-130	12.11.18 05.30	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.11.18 05.30	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-008	Date Collected:	12.04.18 13.45	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	OJS			% Moisture:	
Analyst:	CHE	Date Prep:	12.07.18 16.00	Basis:	Wet Weight
Seq Number:	3072209				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**408**	4.98	mg/kg	12.07.18 19.39		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	12.07.18 08.00	Basis:	Wet Weight
Seq Number:	3072253				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**44.8**	15.0	mg/kg	12.07.18 18.35		1
Diesel Range Organics (DRO)	C10C28DRO	**1340**	15.0	mg/kg	12.07.18 18.35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**46.9**	15.0	mg/kg	12.07.18 18.35		1
Total TPH	PHC635	**1430**	15.0	mg/kg	12.07.18 18.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	12.07.18 18.35	
o-Terphenyl	84-15-1	113	%	70-135	12.07.18 18.35	

Certificate of Analytical Results 607741

LT Environmental, Inc., Arvada, CO

Muy Wayno

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	12.06.18 11.15
Lab Sample Id:	607741-008	Date Collected:	12.04.18 13.45	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	SCM			% Moisture:	
Analyst:	SCM	Date Prep:	12.10.18 16.00	Basis:	Wet Weight
Seq Number:	3072361				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.11.18 05.49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.11.18 05.49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.11.18 05.49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.11.18 05.49	U	1
o-Xylene	95-47-6	**0.0110**	0.00199	mg/kg	12.11.18 05.49		1
Total Xylenes	1330-20-7	**0.0110**	0.00199	mg/kg	12.11.18 05.49		1
Total BTEX		**0.0110**	0.00199	mg/kg	12.11.18 05.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.11.18 05.49	
1,4-Difluorobenzene	540-36-3	102	%	70-130	12.11.18 05.49	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 607741

LT Environmental, Inc.

Muy Wayno

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3072203 — Matrix: Solid — Date Prep: 12.07.18
MB Sample Id: 7667559-1-BLK — LCS Sample Id: 7667559-1-BKS — LCSD Sample Id: 7667559-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	267	107	266	106	90-110	0	20	mg/kg	12.08.18 00:01	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3072209 — Matrix: Solid — Date Prep: 12.07.18
MB Sample Id: 7667610-1-BLK — LCS Sample Id: 7667610-1-BKS — LCSD Sample Id: 7667610-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	254	102	90-110	0	20	mg/kg	12.07.18 16:41	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3072203 — Matrix: Soil — Date Prep: 12.07.18
Parent Sample Id: 607739-006 — MS Sample Id: 607739-006 S — MSD Sample Id: 607739-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	86.8	248	334	100	333	99	90-110	0	20	mg/kg	12.08.18 00:20	

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3072203 — Matrix: Soil — Date Prep: 12.07.18
Parent Sample Id: 607740-004 — MS Sample Id: 607740-004 S — MSD Sample Id: 607740-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	407	250	625	87	637	92	90-110	2	20	mg/kg	12.08.18 01:46	X

Analytical Method: Inorganic Anions by EPA 300 — Prep Method: E300P
Seq Number: 3072209 — Matrix: Soil — Date Prep: 12.07.18
Parent Sample Id: 607741-004 — MS Sample Id: 607741-004 S — MSD Sample Id: 607741-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	65.3	250	333	107	305	96	90-110	9	20	mg/kg	12.07.18 18:56	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 607741

LT Environmental, Inc.

Muy Wayno

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3072209 Matrix: Soil Date Prep: 12.07.18
Parent Sample Id: 607929-001 MS Sample Id: 607929-001 S MSD Sample Id: 607929-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.86	250	257	100	256	100	90-110	0	20	mg/kg	12.07.18 16:59	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3072253 Matrix: Solid Date Prep: 12.07.18
MB Sample Id: 7667651-1-BLK LCS Sample Id: 7667651-1-BKS LCSD Sample Id: 7667651-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	920	92	857	86	70-135	7	20	mg/kg	12.07.18 10:30	
Diesel Range Organics (DRO)	<8.13	1000	920	92	861	86	70-135	7	20	mg/kg	12.07.18 10:30	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		112		107		70-135	%	12.07.18 10:30
o-Terphenyl	95		102		95		70-135	%	12.07.18 10:30

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3072253 Matrix: Soil Date Prep: 12.07.18
Parent Sample Id: 607740-001 MS Sample Id: 607740-001 S MSD Sample Id: 607740-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	830	83	826	83	70-135	0	20	mg/kg	12.07.18 11:28	
Diesel Range Organics (DRO)	8.30	998	869	86	962	96	70-135	10	20	mg/kg	12.07.18 11:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		111		70-135	%	12.07.18 11:28
o-Terphenyl	88		97		70-135	%	12.07.18 11:28

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 607741

LT Environmental, Inc.

Muy Wayno

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3072349 — Matrix: Solid — Date Prep: 12.10.18
MB Sample Id: 7667763-1-BLK — LCS Sample Id: 7667763-1-BKS — LCSD Sample Id: 7667763-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.111	112	0.105	105	70-130	6	35	mg/kg	12.10.18 12:58	
Toluene	<0.000453	0.0994	0.100	101	0.0955	96	70-130	5	35	mg/kg	12.10.18 12:58	
Ethylbenzene	<0.000561	0.0994	0.108	109	0.103	103	70-130	5	35	mg/kg	12.10.18 12:58	
m,p-Xylenes	<0.00101	0.199	0.199	100	0.190	95	70-130	5	35	mg/kg	12.10.18 12:58	
o-Xylene	<0.000342	0.0994	0.0971	98	0.0931	93	70-130	4	35	mg/kg	12.10.18 12:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		102		70-130	%	12.10.18 12:58
4-Bromofluorobenzene	79		73		75		70-130	%	12.10.18 12:58

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3072361 — Matrix: Solid — Date Prep: 12.10.18
MB Sample Id: 7667765-1-BLK — LCS Sample Id: 7667765-1-BKS — LCSD Sample Id: 7667765-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0959	96	0.0958	96	70-130	0	35	mg/kg	12.11.18 03:19	
Toluene	<0.000456	0.100	0.0984	98	0.100	100	70-130	2	35	mg/kg	12.11.18 03:19	
Ethylbenzene	<0.000565	0.100	0.112	112	0.115	115	70-130	3	35	mg/kg	12.11.18 03:19	
m,p-Xylenes	<0.00101	0.200	0.206	103	0.213	106	70-130	3	35	mg/kg	12.11.18 03:19	
o-Xylene	<0.000344	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	12.11.18 03:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		93		93		70-130	%	12.11.18 03:19
4-Bromofluorobenzene	76		81		81		70-130	%	12.11.18 03:19

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3072349 — Matrix: Soil — Date Prep: 12.10.18
Parent Sample Id: 607687-001 — MS Sample Id: 607687-001 S — MSD Sample Id: 607687-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000770	0.200	0.132	66	0.140	70	70-130	6	35	mg/kg	12.10.18 13:36	X
Toluene	<0.000911	0.200	0.102	51	0.0983	49	70-130	4	35	mg/kg	12.10.18 13:36	X
Ethylbenzene	<0.00113	0.200	0.0939	47	0.0722	36	70-130	26	35	mg/kg	12.10.18 13:36	X
m,p-Xylenes	<0.00203	0.400	0.173	43	0.130	33	70-130	28	35	mg/kg	12.10.18 13:36	X
o-Xylene	<0.000689	0.200	0.0841	42	0.0646	32	70-130	26	35	mg/kg	12.10.18 13:36	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		107		70-130	%	12.10.18 13:36
4-Bromofluorobenzene	77		78		70-130	%	12.10.18 13:36

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

QC Summary 607741

LT Environmental, Inc.

Muy Wayno

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3072361 Matrix: Soil Date Prep: 12.10.18

Parent Sample Id: 607740-001 MS Sample Id: 607740-001 S MSD Sample Id: 607740-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.0626	63	0.0897	90	70-130	36	35	mg/kg	12.11.18 03:57	XF
Toluene	<0.000453	0.0994	0.0631	63	0.0772	77	70-130	20	35	mg/kg	12.11.18 03:57	X
Ethylbenzene	<0.000561	0.0994	0.0640	64	0.0763	76	70-130	18	35	mg/kg	12.11.18 03:57	X
m,p-Xylenes	<0.00101	0.199	0.102	51	0.123	62	70-130	19	35	mg/kg	12.11.18 03:57	X
o-Xylene	<0.000342	0.0994	0.0659	66	0.0743	74	70-130	12	35	mg/kg	12.11.18 03:57	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		104		70-130	%	12.11.18 03:57
4-Bromofluorobenzene	80		75		70-130	%	12.11.18 03:57

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES
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www.xenco.com

Xenco Quote #: | Xenco Job #: 607741

Client / Reporting Information

Company Name / Branch: LT Environmental, Inc. Permian Office
Company Address: 3300 N "A" St. Building 1 unit 103 Midland, TX 79705
Email: abaker@ltenv.com Phone No: (432) 704-5178
Project Contact: Adrian Baker
Samplers's Name: Anna Byers

Project Information

Project Name/Number: Muy Wayno
Project Location: Eddy County
Invoice To: XTO Kyle Littrell
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	Field Comments
1	PH01 A	surface	12/4	1100	S	1								X	X	X	X	composite sample
2	PH01 B	0.5'		1105	S	1								X	X	X	X	composite sample
3	PH02 A	0.5'		1130	S	1								X	X	X	X	composite sample
4	PH02 B	1.0'		1145	S	1								X	X	X	X	
5	FS01	1.5'		1325	S	1								X	X	X	X	
6	FS02	0.5'		1255	S	1								X	X	X	X	
7	FS03	0.5'		1300	S	1								X	X	X	X	
8	SW01	1.0'		1345	S	1								X	X	X	X	
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Anna Byers	12/4/18 1800	Timothy P. Ellwood			
2					12/5 15:30	
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						☒ 3.2 / 3.1

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 12/06/2018 11:15:00 AM

Work Order #: 607741

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 12/06/2018

Checklist reviewed by: Jessica Kramer Date: 12/06/2018

Jessica Kramer

ATTACHMENT 3: PHOTOGRAPHIC LOG

View of lined containment and release area.

Project: 012918171	XTO Energy, Inc. Muy Wayno 7 State 1H	LTE Advancing Opportunity
December 04, 2018	Photographic Log	

West facing view of the excavation area.

Project: 012918171	XTO Energy, Inc. Muy Wayno 7 State 1H	LTE Advancing Opportunity
December 04, 2018	Photographic Log	

West facing view of the fenced excavation area.

Project: 012918171	XTO Energy, Inc. Muy Wayno 7 State 1H	LTE Advancing Opportunity
December 04, 2018	Photographic Log	

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

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS

Action 406553

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nMAP1829649787**
Incident Name	**NMAP1829649787 MUY WAYNO 7 STATE 1H @ 30-015-37700**
Incident Type	**Oil Release**
Incident Status	**Remediation Closure Report Received**
Incident Well	**[30-015-37700] MUY WAYNO STATE #001H**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	MUY WAYNO 7 STATE 1H
Date Release Discovered	10/03/2018
Surface Owner	State

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Human Error | Tank (Any) | Crude Oil | Released: 25 BBL | Recovered: 25 BBL | Lost: 0 BBL.
Produced Water Released (bbls) Details	Cause: Human Error | Tank (Any) | Produced Water | Released: 35 BBL | Recovered: 35 BBL | Lost: 0 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.*

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

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

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: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 11/26/2024

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State of New Mexico
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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	U.S. Geological Survey
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (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 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 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	No

Remediation Plan		
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
Requesting a remediation plan approval with this submission		Yes
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)	400
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	8258
GRO+DRO	(EPA SW-846 Method 8015M)	7680
BTEX	(EPA SW-846 Method 8021B or 8260B)	207
Benzene	(EPA SW-846 Method 8021B or 8260B)	1.3
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		10/03/2018
On what date will (or did) the final sampling or liner inspection occur		07/28/2023
On what date will (or was) the remediation complete(d)		07/28/2023
What is the estimated surface area (in square feet) that will be reclaimed		275
What is the estimated volume (in cubic yards) that will be reclaimed		15
What is the estimated surface area (in square feet) that will be remediated		275
What is the estimated volume (in cubic yards) that will be remediated		15
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.		
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.		

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QUESTIONS (continued)

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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	R360 ARTESIA LLC LANDFARM [fEEM0112340644]
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: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 11/26/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

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 (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**406576**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**07/28/2024**
What was the (estimated) number of samples that were to be gathered	**4**
What was the sampling surface area in square feet	**800**

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	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	275
What was the total volume (cubic yards) remediated	15
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	275
What was the total volume (in cubic yards) reclaimed	15
Summarize any additional remediation activities not included by answers (above)	Site assessment and excavation activities were conducted at the Site to address the deferred impacted soil resulting from the October 3, 2018, crude oil and produced water release within the lined containment. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COCs were compliant with the Site Closure Criteria and reclamation requirements. Based on the soil sample analytical results, no further remediation is required.

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 (in .pdf format) 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.

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.

I hereby agree and sign off to the above statement	Name: Colton Brown Title: Environmental Advisor Email: colton.s.brown@exxonmobil.com Date: 11/26/2024

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QUESTIONS (continued)

Operator:	OGRID:
XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 406553

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 406553
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NMAP1829649787 MUY WAYNO 7 STATE 1H, thank you. This Remediation Closure Report is approved.	12/27/2024