State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226341236
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature: ___ _____ Date: __March 8, 2023_____

email: __garrett.green@exxonmobil.com_____ Telephone: ___575-200-0729_____

OCD Only

Received by: Jocelyn Harimon Date: 03/09/2023

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

Closure Approved by: Robert Hamlet Date: 7/18/2023

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

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	NAPP2226341236
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Garrett Green	Contact Telephone 575-200-0729
Contact email garrett.green@exxonmobil.com	Incident # *(assigned by OCD)*
Contact mailing address 3104 E. Greene Street, Carlsbad, New Mexico, 88220	

Location of Release Source

Latitude 32.27692 Longitude -103.92733

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Remuda 25 North 704H	Site Type Production Well
Date Release Discovered 09/11/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
E	30	23S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe) Produced water w/FR	Volume/Weight Released (provide units) 7.00 BBLS	Volume/Weight Recovered (provide units) 6.50 BBLS

Cause of Release: During fracing operations, a hose failed and came off the manifold causing fluids to release both to containment and to pad. A vacuum truck recovered all free fluids. A third-party contractor has been retained for remediation purposes.

State of New Mexico
Oil Conservation Division

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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? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

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:

NA

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: Garrett Green Title: SSHE Coordinator

Signature:  Date: 9/20/2022

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

OCD Only

Received by: Jocelyn Harimon Date: 09/20/2022

Location:	Remuda 25 N 704H	
Spill Date:	9/11/2022	
Area 1		
Approximate Area =	28.07	cu.ft.
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	5.00	bbls
Area 2		
Approximate Area =	445.00	sq. ft.
Average Saturation (or depth) of spill =	2.50	inches

Average Porosity Factor =	0.03	

VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	2.00	bbls

TOTAL VOLUME OF LEAK		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**7.00**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**6.50**	**bbls**

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

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

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 144902
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	9/20/2022

Incident ID	NAPP2226341236
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Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>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.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226341236
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature:__  _____ Date: ____March 8, 2023_____

email: _garrett.green@exxonmobil.com_____ Telephone: ____575-200-0729_____

OCD Only

Received by: Jocelyn Harimon Date: 03/09/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2226341236
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Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature: ___ _____ Date: __March 8, 2023_____

email: __garrett.green@exxonmobil.com_____ Telephone: ___575-200-0729_____

OCD Only

Received by: Jocelyn Harimon Date: 03/09/2023

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ENSOLUM

March 8, 2023

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

Re: Closure Request
Remuda 25 North 704H
Incident Number NAPP2226341236
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Closure Request* to document assessment, excavation, and soil sampling activities at the Remuda 25 North 704H (Site). The purpose of the Site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of produced water with friction reducer (FR) into a temporary lined containment and onto the well pad. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this *Closure Request*, describing Site assessment, excavation, and delineation activities that have occurred and requesting no further action for Incident Number NAPP2226341236.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit E, Section 30, Township 23 South, Range 30 East, in Eddy County, New Mexico (32.27692°, -103.92733°) and is associated with oil and gas exploration and production operations on New Mexico state land.

On September 11, 2022, during hydraulic fracturing (frac) operations, a hose failed from the manifold, resulting in the release of approximately 7 barrels (bbls) of produced water treated with FR into the temporary lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; 6.5 bbls of fluids were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Release Notification Form C-141 (Form C-141) on September 20, 2022. The release was assigned Incident Number NAPP2226341236.

Produced water is recycled through filtering and separation, then mixed in a blender with FR and used as frac fluid during the well completion process. The safety data sheet (SDS) for FR is provided as an attachment.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC).

Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. In January 2021, a soil boring (C-04494) was drilled 0.73 miles west of the Site utilizing a track-mounted hollow-stem auger rig and a sonic rig. Soil boring C-04494 was drilled to a depth of 105 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activites. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 105 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. All wells used to determing depth to groundwater are depicted on Figure 1. The borelog is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an intermittent dry wash, located approximately 660 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. The Site is potentially underlain by unstable geology (high potential karst designation area). Site receptors are identified on Figure 1.

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT AND DELINEATION ACTIVITIES

On January 27, 2023, when the ongoing frac operations at the Site had completed and the release area could be safely accessed, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Soil was collected and field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The release extent was mapped utilizing a handheld Global Positioning System (GPS) unit, which is depicted on Figure 2. Photographic documentation is included in Appendix B.

The temporary lined containment had been removed at the time of the Site assessment so no liner inspection could be completed; however the approximate location of the temporary lined containment was identified and mapped utiliziing a GPS unit. Based on visible staining in the release area and elevated field screening results, excavation and delineation activities appeared warranted.

On February 28, 2023 Ensolum personnel were at the Site to oversee delineation and excavation activities. Delineation pothole PH01 was advanced in the approximate location of the temporary lined containment. The pothole was advanced via backhoe to a depth of 2 feet bgs to assess the vertical extent of the release inside containment. Delineation soil samples were collected at depths ranging of 1-foot and 2 feet bgs. Soil from the pothole was field screened for VOCs and chloride. Field screening

results and observations for the pothole was logged on a lithologic/soil sampling log, which is included in Appendix C. The release extent, approximate location of the temporary lined containment and location of the pothole are depicted on Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following contaminants of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO) and 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 pothole samples, PH01 and PH01A, collected at depths of 1-foot and 2 feet bgs indicated all COC concentrations were compliant with the Closure Criteria. However, based on field screenings collected in the release extent and visible staining, excavation appeared warranted.

EXCAVATION SOIL SAMPLING ACTIVITIES

Impacted soil was excavated from the release area as indicated by visible staining and elevated field screening results within the release extent. Excavation activities were performed using a backhoe, transport vehicle, and hydrovac. The excavation occurred on the well pad where the frac equipment had been staged. Following removal of impacted soil, Ensolum personnel collected 5-point composite soil samples representing a maximum of 200 square feet from the sidewalls and floor 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 FS01 through FS04 were collected from the floor of the excavation at a depth of 1.5 feet bgs. Due to the shallow nature of the excavation, sidewall wall samples were incorporated into the final floor samples to represent soil remaining following the excavation. The excavation soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

The final excavation extent measured approximately 650 square feet. A total of approximately 40 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Carlsbad, New Mexico. After completion of confirmation sampling, the excavation area was secured with fencing.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the excavation floor soil samples FS01 through FS04 collected at 1.5 feet bgs indicated all COC concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the September 11, 2022, release of produced water treated with FR. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that benzene, BTEX, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Based on the soil sample analytical results, no further remediation was required. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions.

Excavation of impacted soil has mitigated impacts at this Site. XTO believes these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2226341236.

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

Sincerely,
Ensolum, LLC

Tacoma Morrissey, MS
Senior Geologist

Ashley L. Ager, MS, PG
CEO

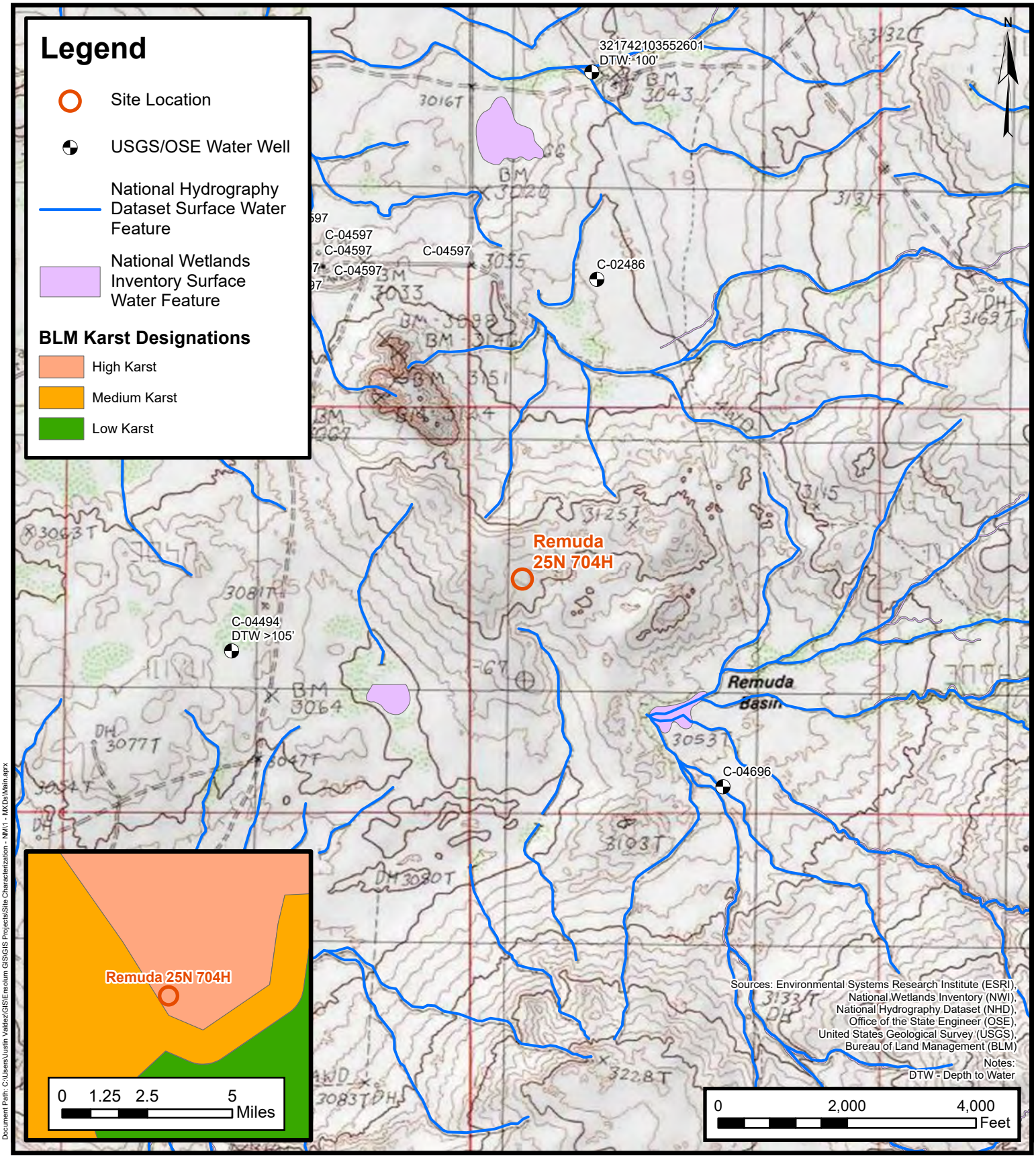
cc: Garrett Green, XTO
Shelby Pennington, XTO
New Mexico State Land Office

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic / Soil Sampling Log
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications
Appendix F	Safety Data Sheet for Friction Reducer

ENSOLUM

FIGURES



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\GIS Projects\Site Characterization - NM\1 - MXDs\Main.aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

Remuda 25N 704H
XTO ENERGY, INC
Incident Number: NAPP2226341236
Unit E, Sec 30, T23S, R30E
Eddy County, New Mexico

FIGURE
1

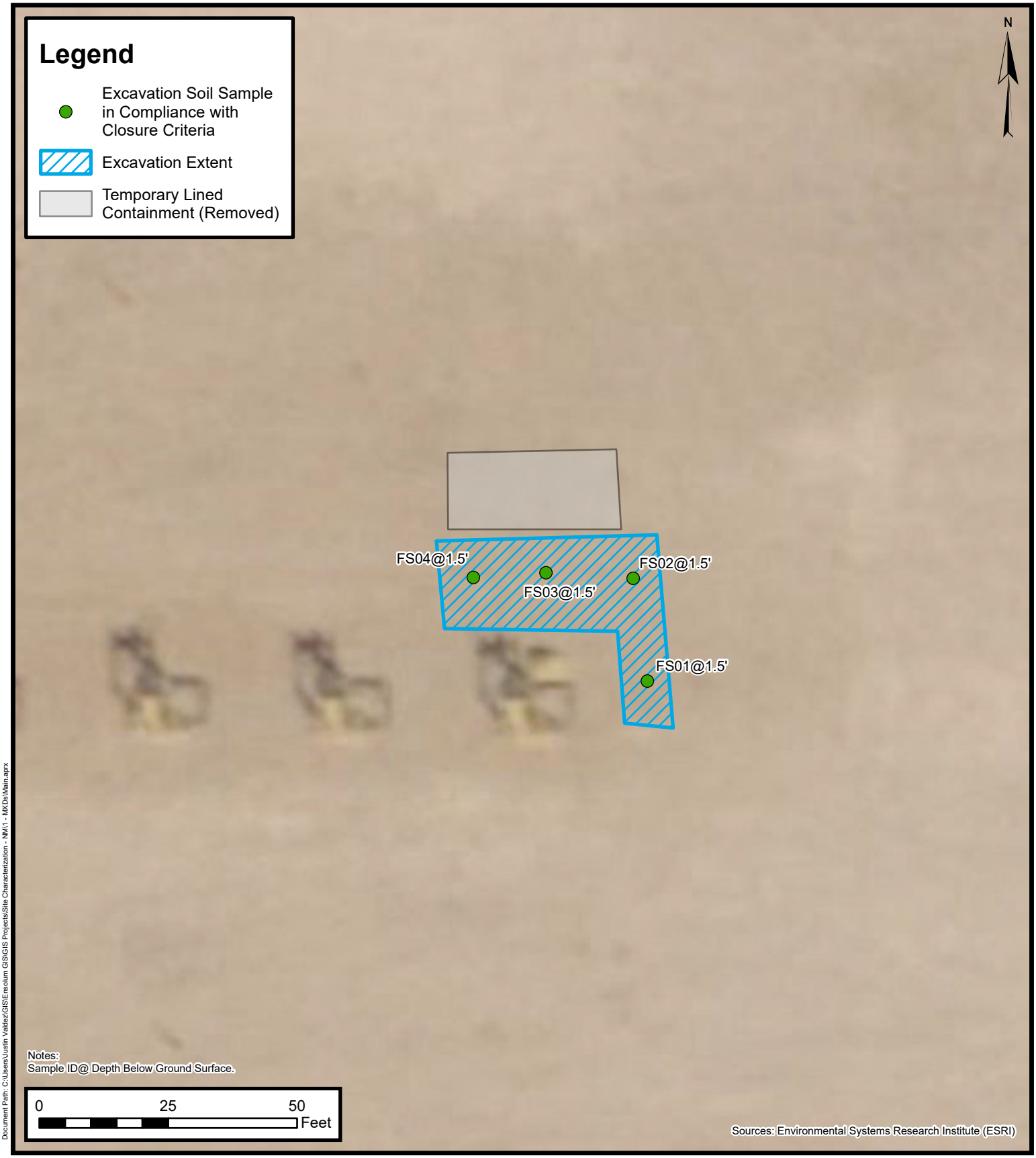
Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\GIS Projects\Site Characterization - NM\1 - MXDs\Main.aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations Map

Remuda 25N 704H
XTO ENERGY, INC
Incident Number: NAPP2226341236
Unit E, Sec 30, T23S, R30E
Eddy County, New Mexico

FIGURE
2



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\GIS Projects\Site Characterization - NM\1 - MXDs\Main.aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Excavation Soil Sample Locations Map

Remuda 25N 704H
XTO ENERGY, INC
Incident Number: NAPP2226341236
Unit E, Sec 30, T23S, R30E
Eddy County, New Mexico

FIGURE
3

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
REMUDA 25 NORTH 704H
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	NE	100	600
Delineation Soil Samples										
PH01	02/28/2023	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	442
PH01A	02/28/2023	2	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	61.5
Confirmation Soil Samples										
FS01	03/01/2023	1.5	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	142
FS02	03/01/2023	1.5	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	48.8
FS03	03/01/2023	1.5	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	<49.8	168
FS04	03/01/2023	1.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	103

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

ENSOLUM

APPENDIX A

Referenced Well Records

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

BH or PH Name: BH01 (C-04494)	Date: 11/18/2020, 12/02/20, 01/05/2021
Site Name: Remuda North 25 Observation Well	
RP or Incident Numbe	
LTE Job Number: TE012919039	
Logged By BB, LAD, FS	Method: Hollow Stem Auger, sonic
Lat/Long:	Field Screening:
Hole Diameter: 6.25", 4.25"	Total Depth: 105'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:
Lithology remarks only. No field screenings: Dry hole

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D			N			1	SP-SC	
						2		0-1' : SAND, dry, brown, poorly graded, fine grain, Clay (10% clay), some roots, no stain, no odor
						3		
						4		1-4' : SAND, dry, reddish-light brown, poorly graded, very fine - fine grain, some rounded caliche pebbles, no stain, no odor
D			N			5	CCHE	
						6		4-9' : CALICHE, dry, light brown-tan, poorly consolidated, sub-rounded caliche pebbles and gravel, very silty, gradational
						7		
						8		9-14' : Abundent sub-round caliche gravel
						9		14-19' : Some sub-angular caliche gravel and pebbles
						10		19-24' : Abundant sub-angular caliche gravel and pebbles, moderately consolidated
						11		
						12		
						13		
						14		
						15		
						16		
						17		
						18		
						19		
						20		
						21		
						22		
						23		
						24		
D			N			25	CL	

WSP USA

508 West Stevens Street
Carlsbad, New Mexico 88220

BH or PH Name: BH01 (C-04494)	Date: 11/18/2020, 12/02/20, 01/05/2021
Site Name: Remuda North 25 Observation Well	
RP or Incident Numbe	
LTE Job Number: TE012919039	
Logged By BB, LAD, FS	Method: Hollow Stem Auger, sonic
Lat/Long:	Field Screening:
Hole Diameter: 6.25", 4.25"	Total Depth: 105'

LITHOLOGIC / SOIL SAMPLING LOG

Comments:
Lithology remarks only. No field screenings: Dry hole

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D			N			26	CL	24-39' : MUDSTONE, dry, reddish-brown, low plasticity, well consolidated, cohesive, trace caliche sub-angular pebbles, no tain, no odor, sharp transition
						27		
						28		
						29		34-39' : Sub-angular calcium carbonate gravel with dissolution features (1-3mm), tan-light brown
						30		At 39' : Begin air rotory (4.25")
						31		39-42' : DOLOMETIC LIMESTONE, tan-light brown, dry, well consolidated, with dissolution features (1-3mm), sharp, no stain, no odor, light to moderate reaction with HCl
						32		
						33		42-45' : Some light gray dolomite with trace dissolution features (>1mm)
						34		At 48' : Stop due to air rotory refusal (11/18/20)
						35		48-56' : Advance borehole with new air rotary bit (12/02/20), DOLOMITE, white, well consolidated, dark gray-black banding, no stain , no odor
						36		
						37		
						38		
						39		
D			N			40	DOL	
						41		
						42		
						43		
						44		
						45		
						46		
						47		
						48		Refusal on 11/18/20
						49		Restart borehole on 12/02/20
						50		

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

BH or PH Name: BH01 (C-04494)	Date: 11/18/2020. 12/02/2020, 1/5/2021
Site Name: Remuda North 25 Observation Well	
RP or Incident Number:	
LTE Job Number: TE012919039	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By BB, LAD, FS / Method: Hollow Stem Auger, sonic
Lat/Long: / Field Screening:	Hole Diameter: 6.25", 4.25" / Total Depth: 105'

Comments:
Lithologic log only, no field screenings

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						51	DOL	48-56' : Advanced borehole with new air rotary bit (12/02/20), DOLOMITE, white, well consolidated, dark gray- banding, no stain no odor
						52		
						53		
						54		
						55		
						56		At 56' : Restarted borehole on 1/5/2021 with sonic rig
						57		56-65' : DOLOMITE, dry, light gray-gray, well consolidated, some calcium crystalline veins (<1mm), some dissolution features (2mm) with fine calcite crystalline, trace orange oxidation staining within dissolution features, no stain, no odor
						58		
						59		62' : Brown-pale yellow coarse crystalline dolomitic limestone stringer (2cm)
						60		63-65' : Abundant calcite crystalline veins (<1mm), pale green-gray, poorly consolidated
						61		
						62		65-69' : MUDSTONE, moist, reddish brown, poorly consolidated, high plasticity, cohesive, abundant coarse crystalline gypsum, few pale green-gray mottling, no stain, no odor
						63		
						64		69-81' : GYPSUM with Anhydrite, dry, greenish gray, some pale yellow, well consolidated, finr crystalline, 20% anhydrite, no stain, no odor
D			N			65	CH-S	
						66		
						67		
						68		
						69	GYP	
D			N			70		
						71		
						72		
						73		
						74		
						75		

WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220	BH or PH Name: BH01 (C-04494)	Date: 11/18/2020. 12/02/2020, 1/5/2021
	Site Name: Remuda North 25 Observation Well	
	RP or Incident Number:	
	LTE Job Number: TE012919039	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By BB, LAD, FS	Method: Hollow Stem Auger, sonic
Lat/Long:	Field Screening:	Hole Diameter: 6.25", 4.25" / Total Depth: 105'

Comments:
Lithologic log only, no field screenings

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						76	GYP	69-81' : GYPSUM with Anhydrite, dry, greenish gray, some pale yellow, well consolidated, finr crystalline, 20% anhydrite, no stain, no odor
						77		
						78		81-98' : MUDSTONE, moist, dark reddish brown, moderately consolidated, high plasticity, cohesive, trace coarse crystalline gypsum inclusions, no stain, no odor
						79		
						80		85-86.5' : greenish-gray well consolidated coarse crystalline gypsum/anhydrite stringer
						81		
D			N			82	CH-S	90-98' : Some fine grain brown sand
						83		At 97' : dark gray-gray gyspum stringer (4cm)
						84		98-99.5' : GYPSUM, dark gray-gray, some brown, dry, well consolidated, fine-coarse crystalline, no stain, no odor
						85		99.5-105' : Sandy SILTSTONE, moist, brown, some gray-dark gray, poorly consolidated, 20% very fine grain sand, no stain, no odor
						86		
						87		
						88		
						89		
						90		
						91		
						92		
						93		
						94		
						95		
						96		
						97		
						98		
D			N			99	GYP	
D			N			100	ML-S	

WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220	BH or PH Name: BH01 (C-04494)	Date: 11/18/2020. 12/02/2020, 1/5/2021
	Site Name: Remuda North 25 Observation Well	
	RP or Incident Number:	
	LTE Job Number: TE012919039	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By BB, LAD, FS	Method: Hollow Stem Auger, sonic
Lat/Long:	Field Screening:	Hole Diameter: 6.25", 4.25" / Total Depth: 105'

Comments:
Lithologic log only, no field screenings

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D			N			101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125	ML-S	99.5-105' : Sandy SILTSTONE, moist, brown, some gray-dark gray, poorly consolidated, 20% very fine grain sand, no stain, no odor At 102' : Thin (<1mm) laminated black/gray well consolidated shale stringer (4cm thick) TD @ 105' bgs (1/5/2021)

National Water Information System: Web Interface

USGS Water Resources (Cooperator Access) Data Category: Groundwater Geographic Area: United States GO

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

site_no list =

- 321717103561001

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

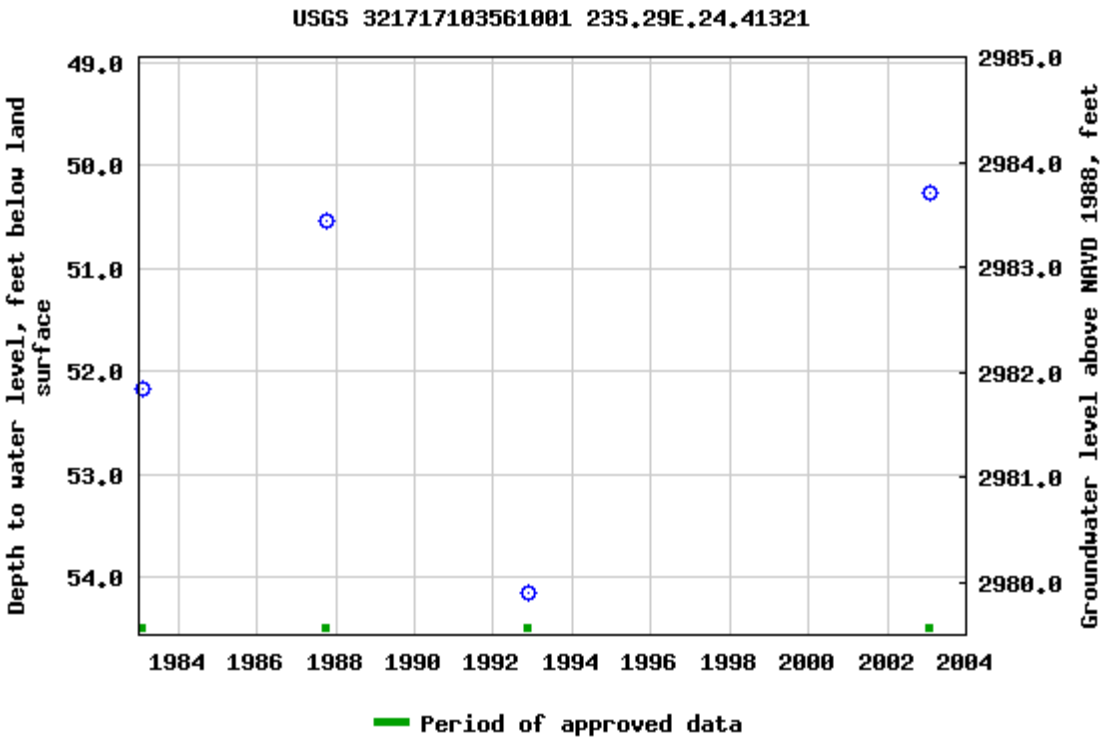
USGS 321717103561001 23S.29E.24.41321

Available data for this site Groundwater: Field measurements GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°17'17", Longitude 103°56'10" NAD27
Land-surface elevation 3,034 feet above NAVD88
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2023-03-06 21:16:18 EST
0.64 0.55 nadww01

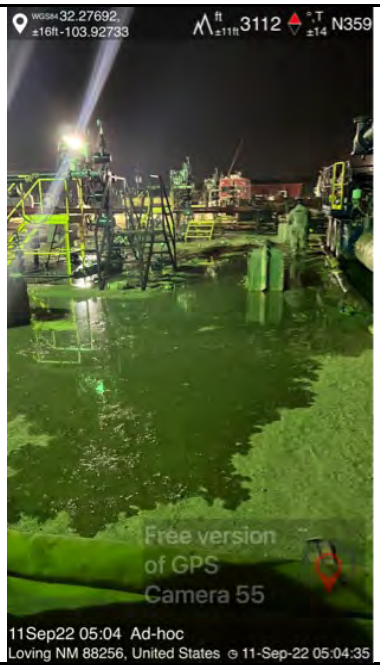
ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc.
Remuda 25N 704H
nAPP2226341236



Photograph 1 Date: 9/11/2022
Description: View of release extent facing west

Photograph 2 Date: 1/27/2023
Description: View of initial site visit facing southwest

Photograph 3 Date: 3/1/2023
Description: View of excavation extent facing southwest

Photograph 4 Date: 3/1/2023
Description: View of excavation extent facing southeast

ENSOLUM

APPENDIX C

Lithologic Soil Sampling Logs

ENSOLUM

	Sample Name: PH01	Date: 2/28/23
	Site Name: Remuda 25N 704H	
	Incident Number: nAPP2226341236	
	Job Number: 03E1558136	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Kase Parker	Method: Backhoe
Coordinates: 32.27692, -103.92733	Hole Diameter: ~3'	Total Depth: 2'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
M	459	0.7	N	PH01	1	1	SM	Fine red/brown sand
M	<173	0.2	N	PH01A	2	2	SM	Fine red/brown sand
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

APPENDIX D

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

Generated 3/3/2023 1:08:35 PM

JOB DESCRIPTION

Remuda 25N 904H
SDG NUMBER 03E1558136

JOB NUMBER

890-4206-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

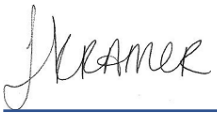
my EOL

Eurofins Carlsbad

Job Notes

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



Generated
3/3/2023 1:08:35 PM

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

Client: Ensolum
Project/Site: Remuda 25N 904H

Laboratory Job ID: 890-4206-1
SDG: 03E1558136

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4206-1
Project/Site: Remuda 25N 904H SDG: 03E1558136

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Job ID: 890-4206-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4206-1

Receipt
The samples were received on 2/28/2023 1:45 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 7.0°C

GC VOA
Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-47338 and analytical batch 880-47605 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was 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 RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-47636 and analytical batch 880-47599 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-47636 and analytical batch 880-47599 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: Method required MS/MSD and/or duplicate QC were prepared and analyzed at required batch frequency for preparation batch 880-47644 and analytical batch 880-47674 using samples from that have already been run and reported previously.

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

Client Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Client Sample ID: PH01

Date Collected: 02/28/23 09:20
Date Received: 02/28/23 13:45
Sample Depth: 1

Lab Sample ID: 890-4206-1
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		03/02/23 12:00	03/02/23 16:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/02/23 12:00	03/02/23 16:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/02/23 12:00	03/02/23 16:33	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/02/23 12:00	03/02/23 16:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/02/23 12:00	03/02/23 16:33	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/02/23 12:00	03/02/23 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*03/02/23 12:00*	*03/02/23 16:33*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*03/02/23 12:00*	*03/02/23 16:33*	*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			03/03/23 13:22	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			03/03/23 12:43	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 *1	50.0		mg/Kg		03/02/23 12:28	03/03/23 03:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/02/23 12:28	03/03/23 03:26	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/02/23 12:28	03/03/23 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*03/02/23 12:28*	*03/03/23 03:26*	*1*
o-Terphenyl	*88*		*70 - 130*	*03/02/23 12:28*	*03/03/23 03:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**442**		5.04		mg/Kg			03/02/23 23:33	1

Client Sample ID: PH01A

Date Collected: 02/28/23 09:25
Date Received: 02/28/23 13:45
Sample Depth: 2

Lab Sample ID: 890-4206-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 16:53	1
Toluene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 16:53	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 16:53	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/02/23 12:00	03/02/23 16:53	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 16:53	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/02/23 12:00	03/02/23 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*03/02/23 12:00*	*03/02/23 16:53*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Client Sample ID: PH01A

Date Collected: 02/28/23 09:25
Date Received: 02/28/23 13:45
Sample Depth: 2

Lab Sample ID: 890-4206-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*03/02/23 12:00*	*03/02/23 16:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			03/03/23 13:22	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/03/23 12:43	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 *1	49.9		mg/Kg		03/02/23 12:28	03/03/23 03:48	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/02/23 12:28	03/03/23 03:48	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/02/23 12:28	03/03/23 03:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*78*		*70 - 130*	*03/02/23 12:28*	*03/03/23 03:48*	*1*
o-Terphenyl	*80*		*70 - 130*	*03/02/23 12:28*	*03/03/23 03:48*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.5**		5.01		mg/Kg			03/02/23 23:48	1

Surrogate Summary

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-24991-A-21-G MS	Matrix Spike	112	113										
880-24991-A-21-H MSD	Matrix Spike Duplicate	114	113										
890-4206-1	PH01	93	106										
890-4206-2	PH01A	112	107										
LCS 880-47338/1-A	Lab Control Sample	106	113										
LCSD 880-47338/2-A	Lab Control Sample Dup	108	111										
MB 880-47338/5-A	Method Blank	104	104										

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)										
880-25244-A-3-B MS	Matrix Spike	87	89										
880-25244-A-3-C MSD	Matrix Spike Duplicate	86	88										
890-4206-1	PH01	84	88										
890-4206-2	PH01A	78	80										
LCS 880-47636/2-A	Lab Control Sample	80	85										
LCSD 880-47636/3-A	Lab Control Sample Dup	96	102										
MB 880-47636/1-A	Method Blank	100	110										

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-47338/5-A
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47338

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/27/23 14:58	03/02/23 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*02/27/23 14:58*	*03/02/23 13:30*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/27/23 14:58*	*03/02/23 13:30*	*1*

Lab Sample ID: LCS 880-47338/1-A
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47338

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09745		mg/Kg		97	70 - 130		
Toluene			0.100	0.09759		mg/Kg		98	70 - 130		
Ethylbenzene			0.100	0.1044		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2238		mg/Kg		112	70 - 130		
o-Xylene			0.100	0.1076		mg/Kg		108	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: LCSD 880-47338/2-A
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1079		mg/Kg		108	70 - 130	10	35
Toluene			0.100	0.1077		mg/Kg		108	70 - 130	10	35
Ethylbenzene			0.100	0.1111		mg/Kg		111	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.2357		mg/Kg		118	70 - 130	5	35
o-Xylene			0.100	0.1140		mg/Kg		114	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: 880-24991-A-21-G MS
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47338

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U	0.0998	0.09092		mg/Kg		91	70 - 130		
Toluene	<0.00200	U	0.0998	0.08458		mg/Kg		84	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

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

Lab Sample ID: 880-24991-A-21-G MS
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47338

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0998	0.08452		mg/Kg		85	70 - 130
m-Xylene & p-Xylene	<0.00400	U F1	0.200	0.1792		mg/Kg		90	70 - 130
o-Xylene	<0.00200	U F1	0.0998	0.08653		mg/Kg		86	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-24991-A-21-H MSD
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47338

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.08438		mg/Kg		84	70 - 130	7	35
Toluene	<0.00200	U	0.100	0.07257		mg/Kg		72	70 - 130	15	35
Ethylbenzene	<0.00200	U F1	0.100	0.06633	F1	mg/Kg		66	70 - 130	24	35
m-Xylene & p-Xylene	<0.00400	U F1	0.200	0.1376	F1	mg/Kg		69	70 - 130	26	35
o-Xylene	<0.00200	U F1	0.100	0.06877	F1	mg/Kg		68	70 - 130	23	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

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

Lab Sample ID: MB 880-47636/1-A
Matrix: Solid
Analysis Batch: 47599

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47636

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		03/02/23 12:28	03/02/23 20:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/02/23 12:28	03/02/23 20:01	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/02/23 12:28	03/02/23 20:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*03/02/23 12:28*	*03/02/23 20:01*	*1*
o-Terphenyl	*110*		*70 - 130*	*03/02/23 12:28*	*03/02/23 20:01*	*1*

Lab Sample ID: LCS 880-47636/2-A
Matrix: Solid
Analysis Batch: 47599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47636

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	810.6		mg/Kg		81	70 - 130
Diesel Range Organics (Over C10-C28)			1000	865.3		mg/Kg		87	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

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

Lab Sample ID: LCS 880-47636/2-A
Matrix: Solid
Analysis Batch: 47599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47636

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	80		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: LCSD 880-47636/3-A
Matrix: Solid
Analysis Batch: 47599

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47636

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1083	*1	mg/Kg		108	70 - 130	29	20
Diesel Range Organics (Over C10-C28)			1000	1023		mg/Kg		102	70 - 130	17	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: 880-25244-A-3-B MS
Matrix: Solid
Analysis Batch: 47599

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47636

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 *1	997	813.4		mg/Kg		78	70 - 130		
Diesel Range Organics (Over C10-C28)	621	F1	997	492.7	F1	mg/Kg		-13	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: 880-25244-A-3-C MSD
Matrix: Solid
Analysis Batch: 47599

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47636

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 *1	999	893.6		mg/Kg		86	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	621	F1	999	508.8	F1	mg/Kg		-11	70 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	86		70 - 130
o-Terphenyl	88		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-47644/1-A
Matrix: Solid
Analysis Batch: 47674

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			03/02/23 22:49	1

Lab Sample ID: LCS 880-47644/2-A
Matrix: Solid
Analysis Batch: 47674

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	262.4		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-47644/3-A
Matrix: Solid
Analysis Batch: 47674

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	261.6		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 880-25305-A-1-D MS
Matrix: Solid
Analysis Batch: 47674

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			252	318.4		mg/Kg					

Lab Sample ID: 880-25305-A-1-E MSD
Matrix: Solid
Analysis Batch: 47674

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			252	319.6		mg/Kg					

QC Association Summary

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

GC VOA

Prep Batch: 47338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Total/NA	Solid	5035	
890-4206-2	PH01A	Total/NA	Solid	5035	
MB 880-47338/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-47338/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-47338/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-24991-A-21-G MS	Matrix Spike	Total/NA	Solid	5035	
880-24991-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Total/NA	Solid	8021B	47338
890-4206-2	PH01A	Total/NA	Solid	8021B	47338
MB 880-47338/5-A	Method Blank	Total/NA	Solid	8021B	47338
LCS 880-47338/1-A	Lab Control Sample	Total/NA	Solid	8021B	47338
LCSD 880-47338/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	47338
880-24991-A-21-G MS	Matrix Spike	Total/NA	Solid	8021B	47338
880-24991-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	47338

Analysis Batch: 47746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Total/NA	Solid	Total BTEX	
890-4206-2	PH01A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 47599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Total/NA	Solid	8015B NM	47636
890-4206-2	PH01A	Total/NA	Solid	8015B NM	47636
MB 880-47636/1-A	Method Blank	Total/NA	Solid	8015B NM	47636
LCS 880-47636/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	47636
LCSD 880-47636/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	47636
880-25244-A-3-B MS	Matrix Spike	Total/NA	Solid	8015B NM	47636
880-25244-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	47636

Prep Batch: 47636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Total/NA	Solid	8015NM Prep	
890-4206-2	PH01A	Total/NA	Solid	8015NM Prep	
MB 880-47636/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-47636/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-47636/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-25244-A-3-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-25244-A-3-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Total/NA	Solid	8015 NM	
890-4206-2	PH01A	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

HPLC/IC

Leach Batch: 47644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Soluble	Solid	DI Leach	
890-4206-2	PH01A	Soluble	Solid	DI Leach	
MB 880-47644/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-47644/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-47644/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-25305-A-1-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-25305-A-1-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 47674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4206-1	PH01	Soluble	Solid	300.0	47644
890-4206-2	PH01A	Soluble	Solid	300.0	47644
MB 880-47644/1-A	Method Blank	Soluble	Solid	300.0	47644
LCS 880-47644/2-A	Lab Control Sample	Soluble	Solid	300.0	47644
LCSD 880-47644/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	47644
880-25305-A-1-D MS	Matrix Spike	Soluble	Solid	300.0	47644
880-25305-A-1-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	47644

Lab Chronicle

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Client Sample ID: PH01

Date Collected: 02/28/23 09:20
Date Received: 02/28/23 13:45

Lab Sample ID: 890-4206-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	47338	03/02/23 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	47605	03/02/23 16:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47746	03/03/23 13:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			47737	03/03/23 12:43	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	47636	03/02/23 12:28	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	47599	03/03/23 03:26	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	47644	03/02/23 13:35	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	47674	03/02/23 23:33	CH	EET MID

Client Sample ID: PH01A

Date Collected: 02/28/23 09:25
Date Received: 02/28/23 13:45

Lab Sample ID: 890-4206-2

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			4.97 g	5 mL	47338	03/02/23 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	47605	03/02/23 16:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47746	03/03/23 13:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			47737	03/03/23 12:43	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	47636	03/02/23 12:28	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	47599	03/03/23 03:48	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	47644	03/02/23 13:35	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	47674	03/02/23 23:48	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: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

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: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

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: Remuda 25N 904H

Job ID: 890-4206-1
SDG: 03E1558136

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4206-1	PH01	Solid	02/28/23 09:20	02/28/23 13:45	1
890-4206-2	PH01A	Solid	02/28/23 09:25	02/28/23 13:45	2

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Chain of Custody

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

Work Order No: _____

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Project Manager:	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:	Remuda 25N 904H	Turn Around	
Project Number:	03E1558136	☑ Routine ☐ Rush	
Project Location:	32.27692, -103.92733	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:	TWM007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.2
Total Containers:		Corrected Temperature:	3.0

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 Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH01	S	2/28/2023	9:20	1'	Grab/	1		x	x	x
PH01A	S	2/28/2023	9:25	2'	Grab/	1		x	x	x

890-4206 Chain of Custody

Sample Comments

Incident ID:
nAPP2226341236
Cost Center:
1674641001
AFE:

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		2.28.23 1345			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4206-1
SDG Number: 03E1558136

Login Number: 4206
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: 890-4206-1
SDG Number: 03E1558136

Login Number: 4206
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 03/02/23 12:31 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	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

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

Generated 3/2/2023 5:47:58 PM

JOB DESCRIPTION

Remuda 25N 904H
SDG NUMBER 03E1558136

JOB NUMBER

890-4213-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

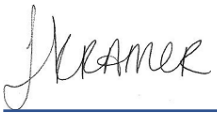
my EOL

Eurofins Carlsbad

Job Notes

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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3/2/2023 5:47:58 PM

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

Client: Ensolum
Project/Site: Remuda 25N 904H

Laboratory Job ID: 890-4213-1
SDG: 03E1558136

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4213-1
Project/Site: Remuda 25N 904H SDG: 03E1558136

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Job ID: 890-4213-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4213-1

Receipt
The samples were received on 3/1/2023 11:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-4213-1), FS02 (890-4213-2), FS03 (890-4213-3) and FS04 (890-4213-4).

GC VOA
Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-47338 and analytical batch 880-47605 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was 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 880-47556 and analytical batch 880-47601 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: FS01 (890-4213-1), (890-4200-A-12-A), (890-4200-A-12-B MS) and (890-4200-A-12-C 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: (LCS 880-47556/2-A) and (LCSD 880-47556/3-A). 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: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Client Sample ID: FS01

Lab Sample ID: 890-4213-1
Matrix: Solid
Date Collected: 03/01/23 09:20
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 14:39	1
Toluene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 14:39	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 14:39	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/02/23 12:00	03/02/23 14:39	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/02/23 12:00	03/02/23 14:39	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/02/23 12:00	03/02/23 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*03/02/23 12:00*	*03/02/23 14:39*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*03/02/23 12:00*	*03/02/23 14:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			03/02/23 18:34	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/02/23 18:12	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	<49.8	U	49.8		mg/Kg		03/01/23 15:15	03/02/23 12:57	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/01/23 15:15	03/02/23 12:57	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/01/23 15:15	03/02/23 12:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*03/01/23 15:15*	*03/02/23 12:57*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*03/01/23 15:15*	*03/02/23 12:57*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**142**		4.96		mg/Kg			03/02/23 17:38	1

Client Sample ID: FS02

Lab Sample ID: 890-4213-2
Matrix: Solid
Date Collected: 03/01/23 09:25
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

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		03/02/23 12:00	03/02/23 15:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/02/23 12:00	03/02/23 15:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/02/23 12:00	03/02/23 15:00	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/02/23 12:00	03/02/23 15:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/02/23 12:00	03/02/23 15:00	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/02/23 12:00	03/02/23 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*03/02/23 12:00*	*03/02/23 15:00*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Client Sample ID: FS02

Lab Sample ID: 890-4213-2
Matrix: Solid

Date Collected: 03/01/23 09:25
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*03/02/23 12:00*	*03/02/23 15:00*	*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			03/02/23 18:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			03/02/23 18:12	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	<49.8	U	49.8	mg/Kg		03/01/23 15:15	03/02/23 13:18	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		03/01/23 15:15	03/02/23 13:18	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		03/01/23 15:15	03/02/23 13:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*03/01/23 15:15*	*03/02/23 13:18*	*1*
o-Terphenyl	*116*		*70 - 130*	*03/01/23 15:15*	*03/02/23 13:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**48.8**		5.01	mg/Kg			03/02/23 17:44	1

Client Sample ID: FS03

Lab Sample ID: 890-4213-3
Matrix: Solid

Date Collected: 03/01/23 09:30
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

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		03/02/23 12:00	03/02/23 15:20	1
Toluene	<0.00198	U	0.00198	mg/Kg		03/02/23 12:00	03/02/23 15:20	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		03/02/23 12:00	03/02/23 15:20	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		03/02/23 12:00	03/02/23 15:20	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		03/02/23 12:00	03/02/23 15:20	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		03/02/23 12:00	03/02/23 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*	*03/02/23 12:00*	*03/02/23 15:20*	*1*
1,4-Difluorobenzene (Surr)	*129*		*70 - 130*	*03/02/23 12:00*	*03/02/23 15:20*	*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			03/02/23 18:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			03/02/23 18:12	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Client Sample ID: FS03

Lab Sample ID: 890-4213-3

Date Collected: 03/01/23 09:30
Matrix: Solid
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

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	<49.8	U	49.8		mg/Kg		03/01/23 15:15	03/02/23 13:40	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/01/23 15:15	03/02/23 13:40	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/01/23 15:15	03/02/23 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*03/01/23 15:15*	*03/02/23 13:40*	*1*
o-Terphenyl	*113*		*70 - 130*	*03/01/23 15:15*	*03/02/23 13:40*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**168**		4.99		mg/Kg			03/02/23 17:50	1

Client Sample ID: FS04

Lab Sample ID: 890-4213-4

Date Collected: 03/01/23 09:35
Matrix: Solid
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

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		03/02/23 12:00	03/02/23 15:41	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/02/23 12:00	03/02/23 15:41	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/02/23 12:00	03/02/23 15:41	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/02/23 12:00	03/02/23 15:41	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/02/23 12:00	03/02/23 15:41	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/02/23 12:00	03/02/23 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*03/02/23 12:00*	*03/02/23 15:41*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*03/02/23 12:00*	*03/02/23 15:41*	*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			03/02/23 18:34	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/02/23 18:12	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		03/01/23 15:15	03/02/23 14:02	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/01/23 15:15	03/02/23 14:02	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/01/23 15:15	03/02/23 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*03/01/23 15:15*	*03/02/23 14:02*	*1*
o-Terphenyl	*116*		*70 - 130*	*03/01/23 15:15*	*03/02/23 14:02*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Client Sample ID: FS04

Date Collected: 03/01/23 09:35
Date Received: 03/01/23 11:37
Sample Depth: 1.5'

Lab Sample ID: 890-4213-4

Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	103		5.02		mg/Kg			03/02/23 17:57	1

Surrogate Summary

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-24991-A-21-G MS	Matrix Spike	112	113
880-24991-A-21-H MSD	Matrix Spike Duplicate	114	113
890-4213-1	FS01	115	109
890-4213-2	FS02	113	111
890-4213-3	FS03	90	129
890-4213-4	FS04	116	111
LCS 880-47338/1-A	Lab Control Sample	106	113
LCSD 880-47338/2-A	Lab Control Sample Dup	108	111
MB 880-47338/5-A	Method Blank	104	104

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-4200-A-12-B MS	Matrix Spike	116	141 S1+
890-4200-A-12-C MSD	Matrix Spike Duplicate	117	142 S1+
890-4213-1	FS01	100	132 S1+
890-4213-2	FS02	89	116
890-4213-3	FS03	88	113
890-4213-4	FS04	90	116
LCS 880-47556/2-A	Lab Control Sample	107	137 S1+
LCSD 880-47556/3-A	Lab Control Sample Dup	116	148 S1+
MB 880-47556/1-A	Method Blank	116	154 S1+

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-47338/5-A
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47338

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/27/23 14:58	03/02/23 13:30	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/27/23 14:58	03/02/23 13:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*02/27/23 14:58*	*03/02/23 13:30*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/27/23 14:58*	*03/02/23 13:30*	*1*

Lab Sample ID: LCS 880-47338/1-A
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47338

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09745		mg/Kg		97	70 - 130		
Toluene			0.100	0.09759		mg/Kg		98	70 - 130		
Ethylbenzene			0.100	0.1044		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2238		mg/Kg		112	70 - 130		
o-Xylene			0.100	0.1076		mg/Kg		108	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: LCSD 880-47338/2-A
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1079		mg/Kg		108	70 - 130	10	35
Toluene			0.100	0.1077		mg/Kg		108	70 - 130	10	35
Ethylbenzene			0.100	0.1111		mg/Kg		111	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.2357		mg/Kg		118	70 - 130	5	35
o-Xylene			0.100	0.1140		mg/Kg		114	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: 880-24991-A-21-G MS
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47338

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U	0.0998	0.09092		mg/Kg		91	70 - 130		
Toluene	<0.00200	U	0.0998	0.08458		mg/Kg		84	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

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

Lab Sample ID: 880-24991-A-21-G MS
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47338

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0998	0.08452		mg/Kg		85	70 - 130
m-Xylene & p-Xylene	<0.00400	U F1	0.200	0.1792		mg/Kg		90	70 - 130
o-Xylene	<0.00200	U F1	0.0998	0.08653		mg/Kg		86	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-24991-A-21-H MSD
Matrix: Solid
Analysis Batch: 47605

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47338

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.08438		mg/Kg		84	70 - 130	7	35
Toluene	<0.00200	U	0.100	0.07257		mg/Kg		72	70 - 130	15	35
Ethylbenzene	<0.00200	U F1	0.100	0.06633	F1	mg/Kg		66	70 - 130	24	35
m-Xylene & p-Xylene	<0.00400	U F1	0.200	0.1376	F1	mg/Kg		69	70 - 130	26	35
o-Xylene	<0.00200	U F1	0.100	0.06877	F1	mg/Kg		68	70 - 130	23	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

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

Lab Sample ID: MB 880-47556/1-A
Matrix: Solid
Analysis Batch: 47601

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47556

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		03/01/23 15:15	03/02/23 08:06	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/01/23 15:15	03/02/23 08:06	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/01/23 15:15	03/02/23 08:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*03/01/23 15:15*	*03/02/23 08:06*	*1*
o-Terphenyl	*154*	*S1+*	*70 - 130*	*03/01/23 15:15*	*03/02/23 08:06*	*1*

Lab Sample ID: LCS 880-47556/2-A
Matrix: Solid
Analysis Batch: 47601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47556

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1086		mg/Kg		109	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1135		mg/Kg		114	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

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

Lab Sample ID: LCS 880-47556/2-A
Matrix: Solid
Analysis Batch: 47601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47556

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	137	S1+	70 - 130

Lab Sample ID: LCSD 880-47556/3-A
Matrix: Solid
Analysis Batch: 47601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47556

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1088		mg/Kg		109	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	1231		mg/Kg		123	70 - 130	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	116		70 - 130
o-Terphenyl	148	S1+	70 - 130

Lab Sample ID: 890-4200-A-12-B MS
Matrix: Solid
Analysis Batch: 47601

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47556

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	999	1019		mg/Kg		99	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1207		mg/Kg		118	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	116		70 - 130
o-Terphenyl	141	S1+	70 - 130

Lab Sample ID: 890-4200-A-12-C MSD
Matrix: Solid
Analysis Batch: 47601

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 47556

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	998	1033		mg/Kg		101	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	1227		mg/Kg		120	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	117		70 - 130
o-Terphenyl	142	S1+	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-47642/1-A
Matrix: Solid
Analysis Batch: 47655

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			03/02/23 14:58	1

Lab Sample ID: LCS 880-47642/2-A
Matrix: Solid
Analysis Batch: 47655

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	237.4		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-47642/3-A
Matrix: Solid
Analysis Batch: 47655

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	233.8		mg/Kg		94	90 - 110	2	20

Lab Sample ID: 890-4211-A-11-B MS
Matrix: Solid
Analysis Batch: 47655

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	52.0		248	290.2		mg/Kg		96	90 - 110		

Lab Sample ID: 890-4211-A-11-C MSD
Matrix: Solid
Analysis Batch: 47655

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	52.0		248	291.0		mg/Kg		97	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

GC VOA

Prep Batch: 47338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Total/NA	Solid	5035	
890-4213-2	FS02	Total/NA	Solid	5035	
890-4213-3	FS03	Total/NA	Solid	5035	
890-4213-4	FS04	Total/NA	Solid	5035	
MB 880-47338/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-47338/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-47338/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-24991-A-21-G MS	Matrix Spike	Total/NA	Solid	5035	
880-24991-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Total/NA	Solid	8021B	47338
890-4213-2	FS02	Total/NA	Solid	8021B	47338
890-4213-3	FS03	Total/NA	Solid	8021B	47338
890-4213-4	FS04	Total/NA	Solid	8021B	47338
MB 880-47338/5-A	Method Blank	Total/NA	Solid	8021B	47338
LCS 880-47338/1-A	Lab Control Sample	Total/NA	Solid	8021B	47338
LCSD 880-47338/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	47338
880-24991-A-21-G MS	Matrix Spike	Total/NA	Solid	8021B	47338
880-24991-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	47338

Analysis Batch: 47680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Total/NA	Solid	Total BTEX	
890-4213-2	FS02	Total/NA	Solid	Total BTEX	
890-4213-3	FS03	Total/NA	Solid	Total BTEX	
890-4213-4	FS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 47556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Total/NA	Solid	8015NM Prep	
890-4213-2	FS02	Total/NA	Solid	8015NM Prep	
890-4213-3	FS03	Total/NA	Solid	8015NM Prep	
890-4213-4	FS04	Total/NA	Solid	8015NM Prep	
MB 880-47556/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-47556/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-47556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4200-A-12-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4200-A-12-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Total/NA	Solid	8015B NM	47556
890-4213-2	FS02	Total/NA	Solid	8015B NM	47556
890-4213-3	FS03	Total/NA	Solid	8015B NM	47556
890-4213-4	FS04	Total/NA	Solid	8015B NM	47556
MB 880-47556/1-A	Method Blank	Total/NA	Solid	8015B NM	47556
LCS 880-47556/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	47556

QC Association Summary

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

GC Semi VOA (Continued)

Analysis Batch: 47601 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-47556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	47556
890-4200-A-12-B MS	Matrix Spike	Total/NA	Solid	8015B NM	47556
890-4200-A-12-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	47556

Analysis Batch: 47676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Total/NA	Solid	8015 NM	
890-4213-2	FS02	Total/NA	Solid	8015 NM	
890-4213-3	FS03	Total/NA	Solid	8015 NM	
890-4213-4	FS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 47642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Soluble	Solid	DI Leach	
890-4213-2	FS02	Soluble	Solid	DI Leach	
890-4213-3	FS03	Soluble	Solid	DI Leach	
890-4213-4	FS04	Soluble	Solid	DI Leach	
MB 880-47642/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-47642/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-47642/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4211-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4211-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 47655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4213-1	FS01	Soluble	Solid	300.0	47642
890-4213-2	FS02	Soluble	Solid	300.0	47642
890-4213-3	FS03	Soluble	Solid	300.0	47642
890-4213-4	FS04	Soluble	Solid	300.0	47642
MB 880-47642/1-A	Method Blank	Soluble	Solid	300.0	47642
LCS 880-47642/2-A	Lab Control Sample	Soluble	Solid	300.0	47642
LCSD 880-47642/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	47642
890-4211-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	47642
890-4211-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	47642

Lab Chronicle

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Client Sample ID: FS01
Date Collected: 03/01/23 09:20
Date Received: 03/01/23 11:37

Lab Sample ID: 890-4213-1
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			4.97 g	5 mL	47338	03/02/23 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	47605	03/02/23 14:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47680	03/02/23 18:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			47676	03/02/23 18:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	47556	03/01/23 15:15	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	47601	03/02/23 12:57	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	47642	03/02/23 13:31	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	47655	03/02/23 17:38	CH	EET MID

Client Sample ID: FS02
Date Collected: 03/01/23 09:25
Date Received: 03/01/23 11:37

Lab Sample ID: 890-4213-2
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			4.99 g	5 mL	47338	03/02/23 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	47605	03/02/23 15:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47680	03/02/23 18:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			47676	03/02/23 18:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	47556	03/01/23 15:15	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	47601	03/02/23 13:18	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	47642	03/02/23 13:31	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	47655	03/02/23 17:44	CH	EET MID

Client Sample ID: FS03
Date Collected: 03/01/23 09:30
Date Received: 03/01/23 11:37

Lab Sample ID: 890-4213-3
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			5.05 g	5 mL	47338	03/02/23 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	47605	03/02/23 15:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47680	03/02/23 18:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			47676	03/02/23 18:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	47556	03/01/23 15:15	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	47601	03/02/23 13:40	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	47642	03/02/23 13:31	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	47655	03/02/23 17:50	CH	EET MID

Client Sample ID: FS04
Date Collected: 03/01/23 09:35
Date Received: 03/01/23 11:37

Lab Sample ID: 890-4213-4
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			5.03 g	5 mL	47338	03/02/23 12:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	47605	03/02/23 15:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47680	03/02/23 18:34	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Client Sample ID: FS04

Date Collected: 03/01/23 09:35
Date Received: 03/01/23 11:37

Lab Sample ID: 890-4213-4

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			47676	03/02/23 18:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	47556	03/01/23 15:15	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	47601	03/02/23 14:02	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	47642	03/02/23 13:31	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	47655	03/02/23 17:57	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: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

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: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

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: Remuda 25N 904H

Job ID: 890-4213-1
SDG: 03E1558136

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4213-1	FS01	Solid	03/01/23 09:20	03/01/23 11:37	1.5'
890-4213-2	FS02	Solid	03/01/23 09:25	03/01/23 11:37	1.5'
890-4213-3	FS03	Solid	03/01/23 09:30	03/01/23 11:37	1.5'
890-4213-4	FS04	Solid	03/01/23 09:35	03/01/23 11:37	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: _____

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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:	Remuda 25N 904H	Turn Around	
Project Number:	03E1558136	☑ Routine ☒ Rush	
Project Location:	32.27692, -103.92733	Due Date:	24hr
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:	Thm-107
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4
Total Containers:		Corrected Temperature:	5.2

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 Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021	Parameters
FS01	S	3/1/2023	9:20	1.5'	Comp	1		x	x	x	
FS02	S	3/1/2023	9:25	1.5'	Comp	1		x	x	x	
FS03	S	3/1/2023	9:30	1.5'	Comp	1		x	x	x	
FS04	S	3/1/2023	9:35	1.5'	Comp	1		x	x	x	

890-4213 Chain of Custody

Sample Comments

Incident ID: nAPP2226341236
Cost Center: 1674641001
AFE:
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	Amanda Short	3-1-23 1135	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4213-1
SDG Number: 03E1558136

Login Number: 4213
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: 890-4213-1
SDG Number: 03E1558136

Login Number: 4213
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 03/02/23 12:31 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 E

NMOCD Notifications

From: Collins, Melanie
To: ocd.enviro (ocd.enviro@emnrd.nm.gov); Bratcher, Michael, EMNRD (mike.bratcher@emnrd.nm.gov); Hamlet, Robert, EMNRD (Robert.Hamlet@emnrd.nm.gov); Harimon, Jocelyn, EMNRD (Jocelyn.Harimon@emnrd.nm.gov)
Cc: Tacoma Morrissey; Green, Garrett J
Subject: XTO - Sampling Notification (Week of 2/27/23 - 3/3/23)
Date: Thursday, February 23, 2023 11:39:15 AM
Attachments: image001.png

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of Feb 27, 2023.

- Row 2 / NAPP2304148392
- Remuda 25N 704H / nAPP2226341236
- Pickett Draw Federal 1 / NAB1919955454
- ROW 4 Muy Wayno / nAPP2209039217
- Tiger Compressor Station / nAPP2235638568

Thank you,

Melanie Collins

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

From: Hamlet, Robert, EMNRD
To: Collins, Melanie
Cc: DelawareSpills /SM; Green, Garrett J; Ashley Ager; Tacoma Morrissey; Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject: XTO Extension Request - Remuda 25 North 704H- Incident Number nAPP2226341236
Date: Wednesday, November 30, 2022 2:39:34 PM
Attachments: image003.png

[**EXTERNAL EMAIL**]

RE: Incident #**NAPP2226341236**

Melanie,

Your request for an extension to **March 10th, 2023** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave.| Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Wednesday, November 30, 2022 11:50 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Ashley Ager <aager@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>
Subject: [EXTERNAL] XTO Extension Request - Remuda 25 North 704H- Incident Number nAPP2226341236

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

Remuda 25 North 704H- Incident Number nAPP2226341236
XTO is requesting an extension for the current deadline of December 10, 2022 for submitting a

remediation work plan or closure request required in 19.15.29.12.B.(1) NMAC at the Remuda 25 North 704H (Incident Number nAPP2226341236). The release occurred on September 11, 2022 during frac operations. Site assessment and remediation activities can not be completed until the frac operations are complete and the Site can be safely accessed. XTO operations will continue to provide status updates and will alert the remediation team once the Site is cleared for remediation activities. In order to complete remediation activities and submit a remediation work plan or closure request, XTO is requesting a 90-day extension until March 10, 2023.

Thank you,

Melanie Collins

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

ENSOLUM

APPENDIX F

Safety Data Sheet for Friction Reducer

PFP INDUSTRIES

SAFETY DATA SHEET

Issuing Date 01-Aug-2019 **Revision Date** 01-Aug-2019 **Revision Number** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name POLYglide Xcel-200

Other means of identification

Product Code(s) 10497

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use No information available

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address
PfP Industries
29738 Goynes Rd.
Katy, TX 77493

Manufacturer Address
PfP Industries
29738 Goynes Rd.
Katy, TX 77493

Emergency telephone number

Company Phone Number 281-371-2000

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 4

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Warning

Combustible liquid

Appearance Opaque **Physical state** Liquid **Odor** Mineral Oil

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other Information
May be harmful in contact with skin
Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical name	CAS No	Weight-%	Trade secret
Petroleum distillates, hydrotreated light	64742-47-8	40 - 70	

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material.

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Opaque
Color	Milky white to yellow
Odor	Mineral Oil
Odor threshold	No information available

Property	Values	Remarks • Method
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	>= 67 °C / 153 °F	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	0.97 - 1.03	
Water solubility	Miscible in water	
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	≥150 mm²/s	
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (oral)	5,005.00 mg/kg
ATEmix (dermal)	2,002.00 mg/kg
ATEmix (inhalation-dust/mist)	5.20 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum distillates, hydrotreated light 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Petroleum distillates, hydrotreated light 64742-47-8	-	2.4: 96 h Oncorhynchus mykiss mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through 2.2: 96 h Lepomis macrochirus mg/L LC50 static	-	4720: 96 h Den-dronereides heteropoda mg/L LC50

Persistence and degradability No information available.

Bioaccumulation There is no data for this product.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. TRANSPORT INFORMATION

DOT Not regulated. Product does not sustain combustion (49 CFR 173.120(b)(3))

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies

PICCS	Complies
AICS	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

US State Regulations This product does not contain any substances regulated by state right-to-know regulations

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards	2	Flammability	2	Instability	0	Physical and chemical properties -
HMIS	Health hazards	2	Flammability	2	Physical hazards	0	Personal protection X

Issuing Date	01-Aug-2019
Revision Date	01-Aug-2019
Revision Note	No information available.

Disclaimer

The data supplied herein is for use only in connection with occupational safety and health. The information provided in this Safety Data Sheet is believed to be correct as of the date issued. Updates to this information may be obtained by contacting (either reference contact location or website). PfP Industries MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. This information is not meant to be an all-inclusive document on worldwide hazard communication regulations. Each user of the material described herein must evaluate the conditions of use and design, many of which will be solely within the user's knowledge and control, and the appropriate protective actions, including proper notification and training of employees, necessary to prevent employee exposures, property damage or release to the environment.

End of Safety Data Sheet

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

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

CONDITIONS

Action 195381

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 195381
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2226341236 REMUDA 25 NORTH 704H, thank you. This closure is approved.	7/18/2023