Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2223832773
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: _SSHE Coordinator_____

Signature: ____  ____ _____ Date: 11/10/2022_____

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

OCD Only

Received by: Jocelyn Harimon Date: 11/10/2022

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

Closure Approved by: Robert Hamlet Date: 2/3/2023

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	NAPP2223832773
District RP	
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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 32.12442° Longitude -103.89635°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU Pierce Canyon 17	Site Type Tank Battery
Date Release Discovered 08/15/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
P	17	25S	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) 0.11	Volume Recovered (bbls) 0.00
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: The oil dump controller failed, causing a small amount of oil to exit the flare and ignite. Fire self-extinguished with no damage to equipment. No injuries were reported. A third-party contractor has been retained for remediation purposes.

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Page 2

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? Fire at facility.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Jake Foust to ocd.enviro@state.nm.us, Mike Bratcher, and Robert Hamlet on 08/16/2022 via email.

Initial Response

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

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

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

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: 8/25/2022

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

OCD Only

Received by: Jocelyn Harimon
Date: 08/26/2022

Location:	PLU Pierce Canyon 17 Battery	
Spill Date:	8/15/2022	
Area 1		
Approximate Area =	956.00	sq. ft.
Average Saturation (or depth) of spill =	0.25	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.11	bbls
Total Produced Water =	0.00	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	**0.11**	**bbls**
Total Produced Water =	**0.00**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**0.00**	**bbls**

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

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

CONDITIONS

Action 138390

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 138390
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	8/29/2022

Incident ID	NAPP2223832773
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2223832773
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Printed Name: _ Garrett Green_____ Title: _SSHE Coordinator_____

Signature: _  _____ Date: __11/10/2022_____

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

OCD Only

Received by: _____Jocelyn Harimon_____ Date: 11/10/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2223832773
District RP	
Facility ID	
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Closure

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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: _SSHE Coordinator_____

Signature: ____  ____ _____ Date: 11/10/2022_____

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

OCD Only

Received by: Jocelyn Harimon Date: 11/10/2022

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

ENSOLUM

November 10, 2022

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

Re: Closure Request
PLU Pierce Canyon 17
Incident Number NAPP2223832773
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 excavation and soil sampling activities completed to address impacted soil at the PLU Pierce Canyon 17 (Site). Soil was impacted due to a release of crude oil and flare fire at the Site. Based on excavation activities and laboratory analytical results, XTO is submitting this Closure Request describing remediation actions completed to date and requesting closure for Incident Number NAPP2223832773.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit P, Section 17, Township 25 South, Range 30 East, in Eddy County, New Mexico (32.12442° N, 103.89635° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On August 15, 2022, the oil dump controller failed, resulting in the release of approximately 0.11 barrel (bbl) of crude oil to exit the flare and ignite on the surface of the well pad. The fluids were consumed and there was nothing to recover. The fire extinguished by itself. XTO notified the New Mexico Oil Conservation Division (NMOCD) immediately via email on August 16, 2022 and submitted a Release Notification Form C-141 (Form C-141) on August 25, 2022. The release was assigned Incident Number NAPP2223832773.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to determine 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.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is USGS well 320628103533001, located approximately 1.1 miles south of the Site. The groundwater well has a reported depth to groundwater of approximately 264 feet bgs and a total depth of 288 feet bgs. Ground surface elevation at the groundwater well location is 3,216 feet above mean sea level (amsl), which is approximately 27 feet lower in elevation than the Site. All wells used for

depth to groundwater determination are presented on Figure 1. The referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 3,406 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). 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)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

SITE ASSESSMENT ACTIVITIES

On September 23, 2022, site assesment activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Ensolum personnel collected five delineation soil samples (SS01 through SS05) at an approximate depth of 0.5 feet bgs. The delineation soil samples were collected within and around the release extent to assess for the presence or absence of impacted soil. The delineation soil samples were field screened for volatile aromatic hydrocarbons (VOCs) and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix B.

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 at or below 4 degrees Celsius (°C) under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COC): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for delineation soil sample SS01 indicated that GRO/DRO and TPH concentrations exceeded the Closure Criteria. Laboratory analytical results for delineation soil sample SS02 indicated that TPH concentration exceeded the Closure Criteria. Based on visible staining in the release area, elevated field screening results, and laboratory analytical, additional remediation activities were warranted.

DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

Between September 28, and October 26, 2022, Ensolum personnel oversaw delineation and excavation activities. Delineation soil samples PH01 and PH02 were advanced by use of heavy equipment to assess the vertical extent of the release. PH01 and PH02 delineation soil samples were collected in the vicinity of SS01 and SS02, respectively, and were advanced to an approximate total depth of 1-foot bgs. Soil from each pothole were field screened as described above. Field screening results and observations were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 2.

Soil was excavated from the release area as indicated by visible staining, elevated field screening, and laboratory analytical results. Following the removal of the impacted soil, 5-point composite soil samples were collected at least every 200 square feet from the floor and sidewall 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. Excavation soil samples FS01 through FS07 were collected from the floor of the excavation at an approximate depth of 1-foot bgs. Excavation soil samples FS02A, FS04A, FS05A, and FS07A, were collected from the floor of the excavation at an approximate depth of 2 feet bgs. Excavation soil samples SW01 and SW02 were collected from the sidewalls of the excavation at depths ranging from ground surface to 2 feet bgs. The excavation extent and excavation soil sample locations are presented on Figure 3.

The final excavation extent measured approximately 1,300 square feet. A total of approximately 100 cubic yards of soil were removed during the excavation activities. The soil was transported and properly disposed of at the R360 Landfill Facility in Hobbs, New Mexico.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for confirmation soil samples collected from the final excavation extent indicated that all COC concentrations are compliant with the Closure Criteria and the strictest Table I Closure Criteria. Laboratory analytical results are summarized in Table I and laboratory analytical reports are included in Appendix D. NMOCD notifications for the sampling events are included in Appendix E.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the release of crude oil resulting in a flare fire. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria and the strictest Table I 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. Depth to groundwater has been estimated to be greater than 100 feet bgs, and no other sensitive receptors were identified near the release extent. XTO believes these remedial actions is protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2223832773.

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

Sincerely,
Ensolum, LLC

Anita Thapalia, P.G.
Project Geologist

Ashley L. Ager, P.G.
Program Director

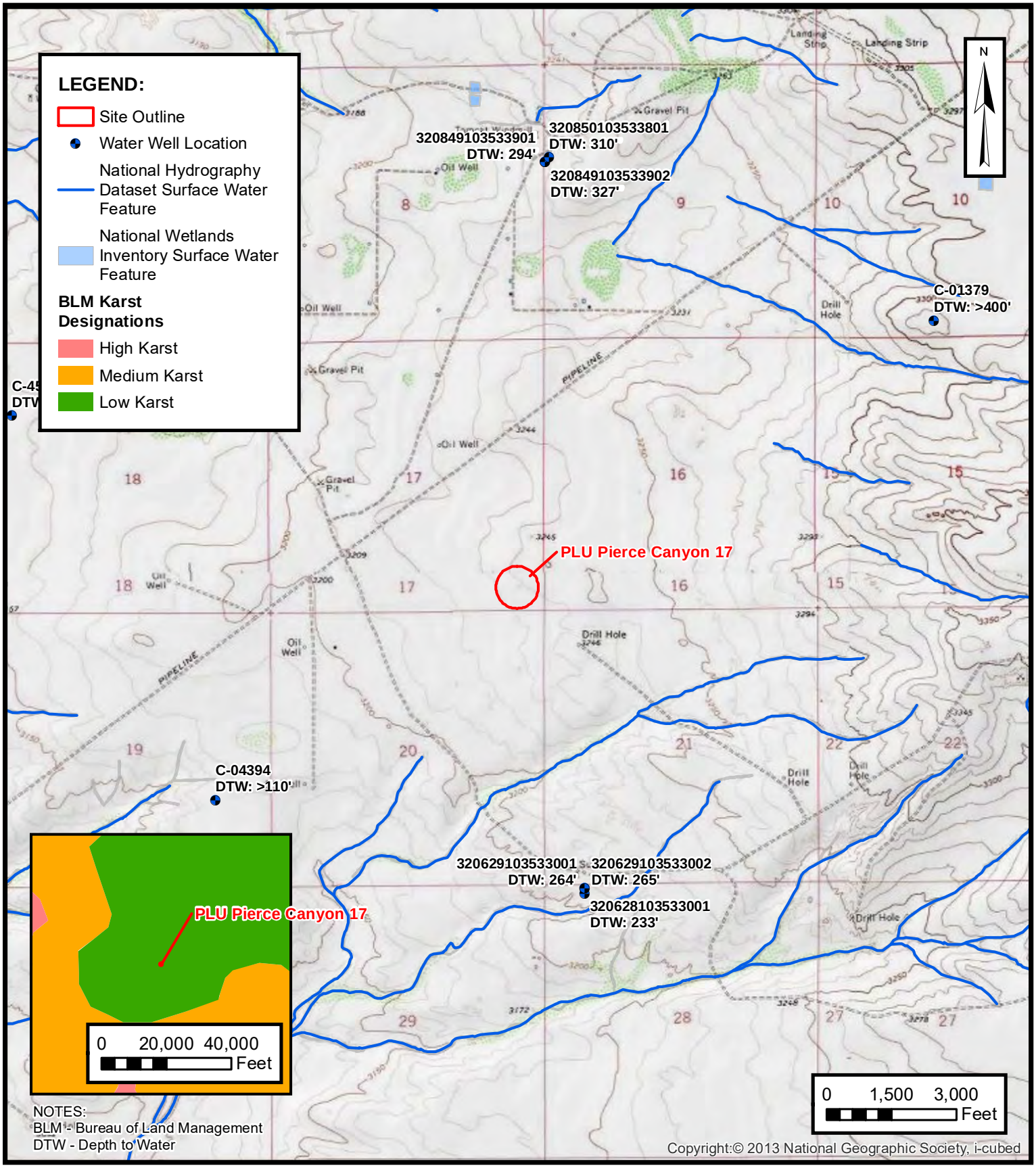
cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

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 Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications

ENSOLUM

FIGURES

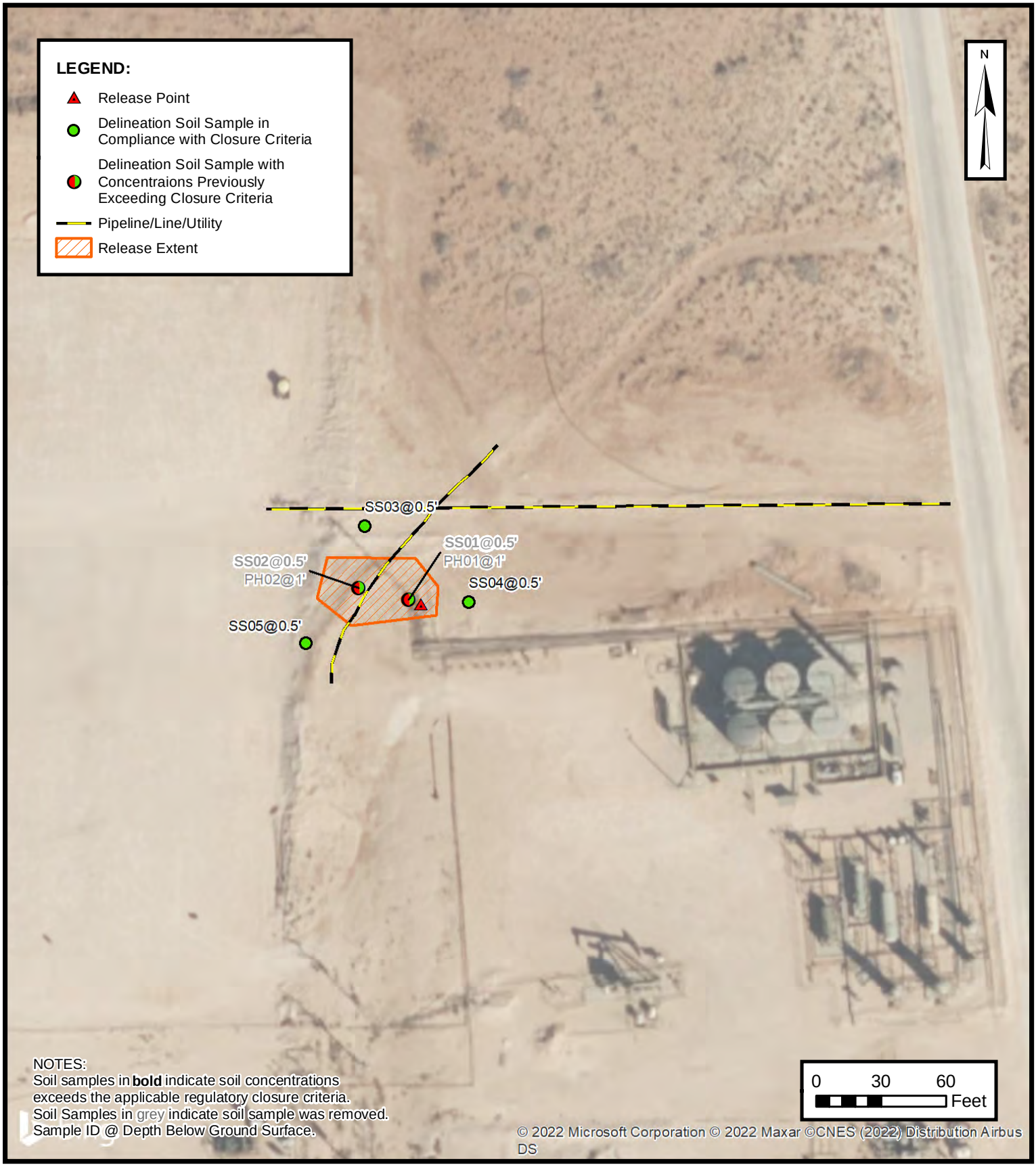


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

SITE RECEPTOR MAP

XTO ENERGY, INC
PLU PIERCE CANYON 17
Incident ID NAPP2223832773
Unit P, Sec 17, T25S, R30E
Eddy County, New Mexico

FIGURE
1



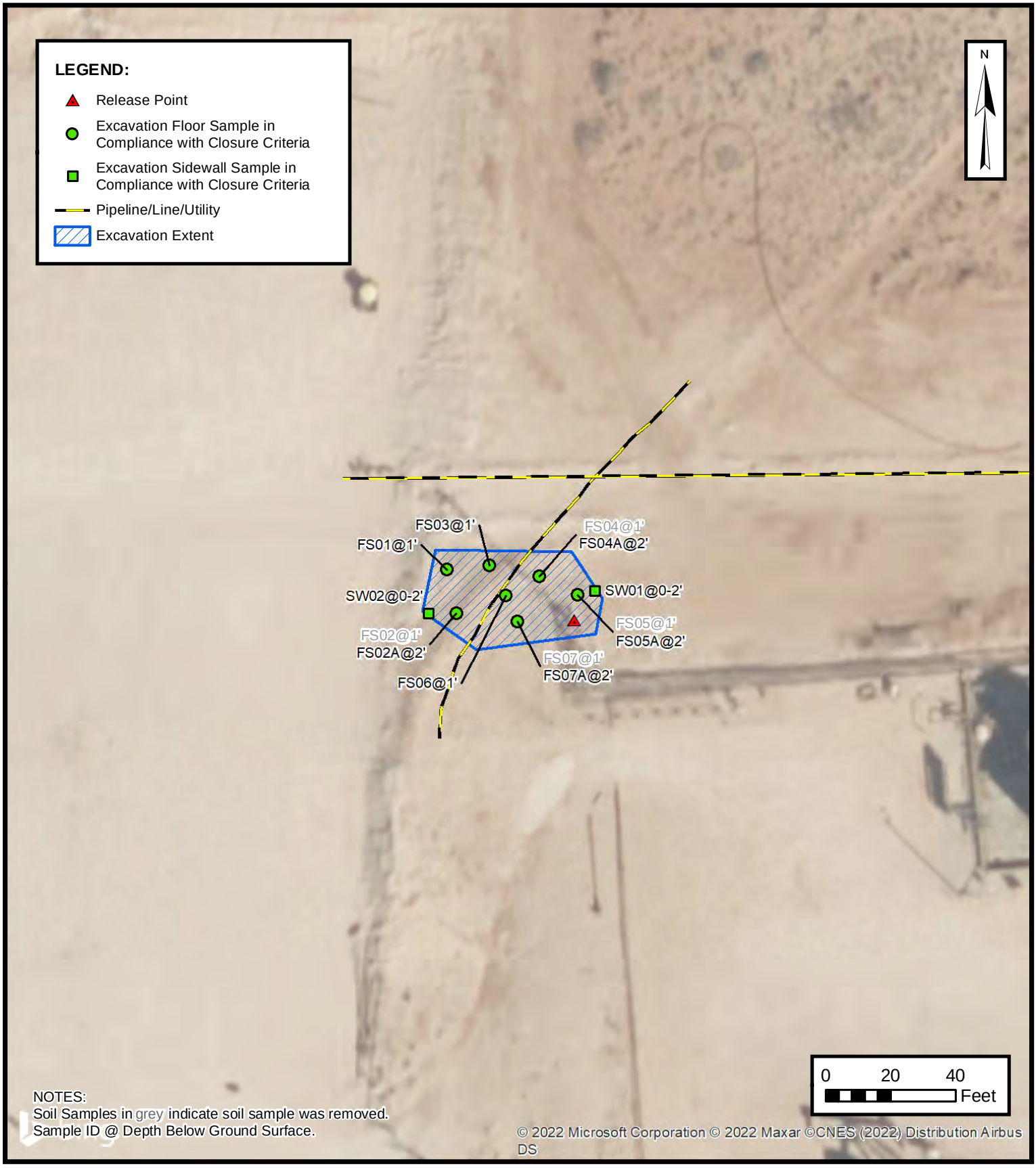
NOTES:
Soil samples in **bold** indicate soil concentrations exceeds the applicable regulatory closure criteria.
Soil Samples in grey indicate soil sample was removed.
Sample ID @ Depth Below Ground Surface.

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

DELINEATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
PLU PIERCE CANYON 17
Incident ID NAPP2223832773
Unit P, Sec 17, T25S, R30E
Eddy County, New Mexico

FIGURE
2



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

EXCAVATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
PLU PIERCE CANYON 17
Incident ID NAPP2223832773
Unit P, Sec 17, T25S, R30E
Eddy County, New Mexico

FIGURE
3

ENSOLUM

TABLES

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU Pierce Canyon 17
XTO Energy, Inc
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS01	09/23/2022	0.5	<0.00198	<0.00397	<49.9	4,290	654	**4,290**	**4,940**	216
PH01	09/28/2022	1	<0.00199	<0.00398	<50.0	563	99.4	563	662.4	216
SS02	09/23/2022	0.5	<0.00200	<0.00401	<49.9	1,110	212	**1,110**	1,320	213
PH02	09/28/2022	1	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	61.6
SS03	09/23/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	80.6
SS04	09/23/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	41.4
SS05	09/23/2022	0.5	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	42.6
Excavation Confirmation Soil Samples										
FS01	09/28/2022	1	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	298
FS02	09/28/2022	1	<0.00200	<0.00399	<50.0	105	<50.0	105	105	339
FS02A	10/26/2022	2	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	113
FS03	09/28/2022	1	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	271
FS04	09/28/2022	1	<0.00200	<0.00399	<50.0	89.5	<50.0	89.5	89.5	650
FS04A	10/26/2022	2	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	88.4
FS05	09/28/2022	1	<0.00199	<0.00398	<49.9	53.2	<49.9	53.2	53.2	639
FS05A	10/26/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	38.3
FS06	09/28/2022	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	74.4
FS07	09/28/2022	1	<0.00198	<0.00396	<49.9	195	<49.9	195	195	287
FS07A	10/26/2022	2	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	69.2
SW01	10/26/2022	0-2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	211
SW02	10/26/2022	0-2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	90.1

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon
NMAC: New Mexico Administrative Code
grey text indicates soil sample removed during excavation activities

ENSOLUM

APPENDIX A

Referenced Well Records

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.
- Attention current WaterAlert users: NextGen WaterAlert is replacing Legacy WaterAlert. You must take action before 9/30/2022 to retain your alerts. Read more.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 320628103533001

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 320628103533001 25S.30E.21.333424

Eddy County, New Mexico
Latitude 32°06'28", Longitude 103°53'30" NAD27
Land-surface elevation 3,207 feet above NAVD88
The depth of the well is 288 feet below land surface.
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source measu
1958-08-21		D	62610		2972.36	NGVD29	1	Z		
1958-08-21		D	62611		2974.00	NAVD88	1	Z		
1958-08-21		D	72019	233.00			1	Z		
1959-02-05		D	62610		2939.26	NGVD29	P	Z		
1959-02-05		D	62611		2940.90	NAVD88	P	Z		
1959-02-05		D	72019	266.10			P	Z		
1983-02-01		D	62610		2945.48	NGVD29	1	Z		
1983-02-01		D	62611		2947.12	NAVD88	1	Z		
1983-02-01		D	72019	259.88			1	Z		
1998-01-28		D	62610		2940.76	NGVD29	1	S		
1998-01-28		D	62611		2942.40	NAVD88	1	S		
1998-01-28		D	72019	264.60			1	S		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

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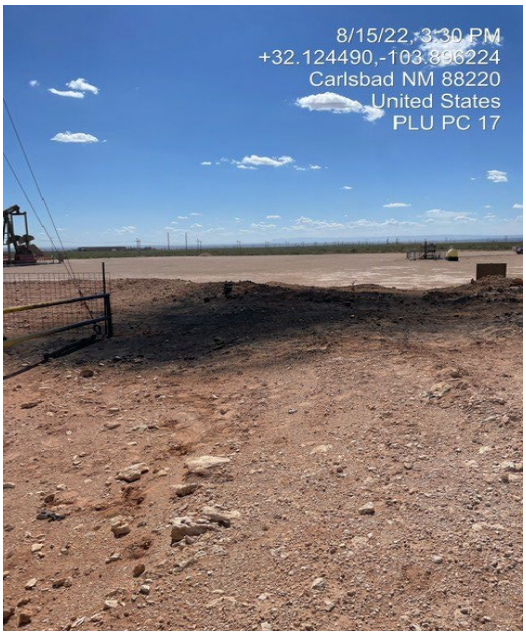
APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc
PLU Pierce Canyon 17
Incident No. NAPP2223832773



Photograph: 1 Date: 8/15/2022
Description: Charred/staining of the release extent
View: West

Photograph: 2 Date: 9/28/2022
Description: Charred/staining of the release extent
View: East

Photograph: 3 Date: 9/28/2022
Description: Delineation activities.
View: North

Photograph: 4 Date: 10/26/2022
Description: Excavation activities.
View: West

ENSOLUM

APPENDIX C

Lithologic Soil Sampling Logs

ENSOLUM

	Sample Name: PH01	Date: 9/28/2022
	Site Name: PLU Pierce Canyon 17	
	Incident Number: NAPP2223832773	
	Job Number: 03E1558116	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Meredith Roberts	Method: Backhoe
Coordinates: 32.12442, -103.89635	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% error factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	SP	0-0.75', SAND, reddish brown poorly graded sand, moist, trace H/C odor, no stain.
M	<168	13.4	Y	SS01	0.5	0.5		
							CCHE	0.75'-1', CALICHE, moist, some light brown sand, no stain, no odor.
D	<168	0.0	N	PH01	1	1		

Total Depth at 1' bgs.

ENSOLUM

	Sample Name: PH02	Date: 9/28/2022
	Site Name: PLU Pierce Canyon 17	
	Incident Number: NAPP2223832773	
	Job Number: 03E1558116	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Meredith Roberts	Method: Backhoe
Coordinates: 32.12442, -103.89635	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% error factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	SP	0-0.75', SAND, reddish brown poorly graded sand, moist, trace H/C odor, no stain.
M	<168	36.4	Y	SS02	0.5	0.5		
							CCHE	0.75'-1', CALICHE, moist, some light brown sand, no stain, no odor.
D	<168	13.1	N	PH02	1	1		

Total Depth at 1' bgs.

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3048-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU Pierce Canyon 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/6/2022 11:48:41 AM

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

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

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

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Laboratory Job ID: 890-3048-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum Job ID: 890-3048-1
Project/Site: PLU Pierce Canyon 17 SDG: 03E1558116

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Job ID: 890-3048-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3048-1

Receipt
The sample was received on 9/23/2022 3:47 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

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

GC Semi VOA
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: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Client Sample ID: SS05

Date Collected: 09/23/22 10:00
Date Received: 09/23/22 15:47
Sample Depth: 6'

Lab Sample ID: 890-3048-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		10/04/22 13:34	10/05/22 19:18	1
Toluene	<0.00202	U	0.00202		mg/Kg		10/04/22 13:34	10/05/22 19:18	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		10/04/22 13:34	10/05/22 19:18	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		10/04/22 13:34	10/05/22 19:18	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		10/04/22 13:34	10/05/22 19:18	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		10/04/22 13:34	10/05/22 19:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*	*10/04/22 13:34*	*10/05/22 19:18*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/04/22 13:34*	*10/05/22 19:18*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			10/06/22 12:33	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			09/28/22 09:15	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/27/22 11:43	09/28/22 04:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/27/22 11:43	09/28/22 04:24	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/27/22 11:43	09/28/22 04:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*09/27/22 11:43*	*09/28/22 04:24*	*1*
o-Terphenyl	*100*		*70 - 130*	*09/27/22 11:43*	*09/28/22 04:24*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42.6**		5.03		mg/Kg			09/28/22 13:27	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

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)
880-19583-A-1-E MS	Matrix Spike	97	105
880-19583-A-1-F MSD	Matrix Spike Duplicate	93	93
890-3048-1	SS05	122	105
LCS 880-36058/1-A	Lab Control Sample	93	95
LCSD 880-36058/2-A	Lab Control Sample Dup	95	104
MB 880-36058/5-A	Method Blank	93	84

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3046-A-1-E MS	Matrix Spike	106	99
890-3046-A-1-F MSD	Matrix Spike Duplicate	95	89
890-3048-1	SS05	99	100
LCS 880-35513/2-A	Lab Control Sample	98	102
LCSD 880-35513/3-A	Lab Control Sample Dup	114	124
MB 880-35513/1-A	Method Blank	109	112

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36058/5-A
Matrix: Solid
Analysis Batch: 36122

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36058

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:34	10/05/22 10:04	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:34	10/05/22 10:04	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:34	10/05/22 10:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/04/22 13:34	10/05/22 10:04	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:34	10/05/22 10:04	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/04/22 13:34	10/05/22 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*10/04/22 13:34*	*10/05/22 10:04*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*10/04/22 13:34*	*10/05/22 10:04*	*1*

Lab Sample ID: LCS 880-36058/1-A
Matrix: Solid
Analysis Batch: 36122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36058

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1062		mg/Kg		106	70 - 130		
Toluene			0.100	0.1099		mg/Kg		110	70 - 130		
Ethylbenzene			0.100	0.1085		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2271		mg/Kg		114	70 - 130		
o-Xylene			0.100	0.1130		mg/Kg		113	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-36058/2-A
Matrix: Solid
Analysis Batch: 36122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36058

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1225		mg/Kg		123	70 - 130	14	35
Toluene			0.100	0.1214		mg/Kg		121	70 - 130	10	35
Ethylbenzene			0.100	0.1147		mg/Kg		115	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.2404		mg/Kg		120	70 - 130	6	35
o-Xylene			0.100	0.1210		mg/Kg		121	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-19583-A-1-E MS
Matrix: Solid
Analysis Batch: 36122

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36058

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.101	0.1148		mg/Kg		114	70 - 130		
Toluene	<0.00201	U	0.101	0.1165		mg/Kg		115	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

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

Lab Sample ID: 880-19583-A-1-E MS
Matrix: Solid
Analysis Batch: 36122

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36058

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.101	0.1110		mg/Kg		110	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.202	0.2316		mg/Kg		115	70 - 130
o-Xylene	<0.00201	U	0.101	0.1157		mg/Kg		115	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: 880-19583-A-1-F MSD
Matrix: Solid
Analysis Batch: 36122

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 36058

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.09598		mg/Kg		97	70 - 130	18	35
Toluene	<0.00201	U	0.0994	0.1014		mg/Kg		101	70 - 130	14	35
Ethylbenzene	<0.00201	U	0.0994	0.09947		mg/Kg		100	70 - 130	11	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.2082		mg/Kg		105	70 - 130	11	35
o-Xylene	<0.00201	U	0.0994	0.1035		mg/Kg		104	70 - 130	11	35

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

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

Lab Sample ID: MB 880-35513/1-A
Matrix: Solid
Analysis Batch: 35458

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35513

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		09/27/22 11:43	09/27/22 20:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/27/22 11:43	09/27/22 20:58	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/27/22 11:43	09/27/22 20:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*09/27/22 11:43*	*09/27/22 20:58*	*1*
o-Terphenyl	*112*		*70 - 130*	*09/27/22 11:43*	*09/27/22 20:58*	*1*

Lab Sample ID: LCS 880-35513/2-A
Matrix: Solid
Analysis Batch: 35458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35513

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	820.1		mg/Kg		82	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1005		mg/Kg		100	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

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

Lab Sample ID: LCS 880-35513/2-A
Matrix: Solid
Analysis Batch: 35458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35513

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: LCSD 880-35513/3-A
Matrix: Solid
Analysis Batch: 35458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35513

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	897.0		mg/Kg		90	70 - 130	9	20
Diesel Range Organics (Over C10-C28)			1000	1217		mg/Kg		122	70 - 130	19	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	124		70 - 130

Lab Sample ID: 890-3046-A-1-E MS
Matrix: Solid
Analysis Batch: 35458

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 35513

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	914.1		mg/Kg		92	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1142		mg/Kg		114	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: 890-3046-A-1-F MSD
Matrix: Solid
Analysis Batch: 35458

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 35513

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	849.3		mg/Kg		85	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1043		mg/Kg		104	70 - 130	9	20

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

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-35475/1-A
Matrix: Solid
Analysis Batch: 35532

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			09/28/22 10:56	1

Lab Sample ID: LCS 880-35475/2-A
Matrix: Solid
Analysis Batch: 35532

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	234.7		mg/Kg		94	90 - 110		

Lab Sample ID: LCSD 880-35475/3-A
Matrix: Solid
Analysis Batch: 35532

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	234.5		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 890-3047-A-1-B MS
Matrix: Solid
Analysis Batch: 35532

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	230		249	494.5		mg/Kg		106	90 - 110		

Lab Sample ID: 890-3047-A-1-C MSD
Matrix: Solid
Analysis Batch: 35532

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	230		249	465.1		mg/Kg		94	90 - 110	6	20

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

GC VOA

Prep Batch: 36058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Total/NA	Solid	5035	
MB 880-36058/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36058/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36058/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-19583-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-19583-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Total/NA	Solid	8021B	36058
MB 880-36058/5-A	Method Blank	Total/NA	Solid	8021B	36058
LCS 880-36058/1-A	Lab Control Sample	Total/NA	Solid	8021B	36058
LCSD 880-36058/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36058
880-19583-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	36058
880-19583-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36058

Analysis Batch: 36266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 35458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Total/NA	Solid	8015B NM	35513
MB 880-35513/1-A	Method Blank	Total/NA	Solid	8015B NM	35513
LCS 880-35513/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	35513
LCSD 880-35513/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	35513
890-3046-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	35513
890-3046-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	35513

Prep Batch: 35513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Total/NA	Solid	8015NM Prep	
MB 880-35513/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-35513/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-35513/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3046-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3046-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 35564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 35475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Soluble	Solid	DI Leach	
MB 880-35475/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

HPLC/IC (Continued)

Leach Batch: 35475 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 35532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3048-1	SS05	Soluble	Solid	300.0	35475
MB 880-35475/1-A	Method Blank	Soluble	Solid	300.0	35475
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	300.0	35475
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	35475
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	35475
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	35475

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Client Sample ID: SS05
Date Collected: 09/23/22 10:00
Date Received: 09/23/22 15:47

Lab Sample ID: 890-3048-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	36058	10/04/22 13:34	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36122	10/05/22 19:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36266	10/06/22 12:33	AJ	EET MID
Total/NA	Analysis	8015 NM		1			35564	09/28/22 09:15	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	35513	09/27/22 11:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35458	09/28/22 04:24	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	35475	09/27/22 09:07	KS	EET MID
Soluble	Analysis	300.0		1			35532	09/28/22 13:27	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: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3048-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3048-1	SS05	Solid	09/23/22 10:00	09/23/22 15:47	6'

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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:	Ben Belill	Bill to: (if different)	Garrett 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:	989-854-0852	Email:	bbelill@ensolum.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:	PLU Pierce Canyon 17	Turn Around	
Project Number:	03E1558116	☑ Routine ☐ Rush	
Project Location:	32.12442, -103.89635	Due Date:	
Sampler's Name:	Meredith Roberts	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TAM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.6	
Total Containers:		Corrected Temperature:	4.4	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS05	S	9/23/2022	1000	6"	Grab	1		x	x	x

ANALYSIS REQUEST — Parameters

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident ID:
Napp2223832773
Cost Center:
1081061001

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
		9/23/22 1547			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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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:	Ben Belill	Bill to: (if different)	Garrett 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:	989-854-0852	Email:	bbelill@ensolum.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:	PLU Pierce Canyon 17	Turn Around	
Project Number:	03E1558116	☑ Routine ☐ Rush	
Project Location:	32.12442, -103.89635	Due Date:	
Sampler's Name:	Meredith Roberts	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TAM 007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.6
Total Containers:		Corrected Temperature:	4.4

ANALYSIS REQUEST

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)
SS04	S	9/23/2022	0955	6"	Grab	1		x	x	x

Parameters

890-3049 Chain of Custody

Sample Comments

Incident ID:
Napp2223832773
Cost Center:
1081061001

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		9/23/22 1547			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020 2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3048-1
SDG Number: 03E1558116

Login Number: 3048
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3048-1
SDG Number: 03E1558116

Login Number: 3048
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/27/22 10:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3049-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU Pierce Canyon 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/7/2022 9:42:58 AM

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

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

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

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Laboratory Job ID: 890-3049-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum Job ID: 890-3049-1
Project/Site: PLU Pierce Canyon 17 SDG: 03E1558116

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Job ID: 890-3049-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3049-1

Receipt
The sample was received on 9/23/2022 3:47 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

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

GC Semi VOA
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: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Client Sample ID: SS04

Date Collected: 09/23/22 09:55
Date Received: 09/23/22 15:47
Sample Depth: 6'

Lab Sample ID: 890-3049-1

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		10/05/22 16:50	10/07/22 09:13	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/05/22 16:50	10/07/22 09:13	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/05/22 16:50	10/07/22 09:13	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/05/22 16:50	10/07/22 09:13	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/05/22 16:50	10/07/22 09:13	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/05/22 16:50	10/07/22 09:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*10/05/22 16:50*	*10/07/22 09:13*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*10/05/22 16:50*	*10/07/22 09:13*	*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			10/07/22 10:10	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			09/28/22 09:31	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		09/27/22 11:47	09/28/22 04:03	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/27/22 11:47	09/28/22 04:03	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/27/22 11:47	09/28/22 04:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*09/27/22 11:47*	*09/28/22 04:03*	*1*
o-Terphenyl	*114*		*70 - 130*	*09/27/22 11:47*	*09/28/22 04:03*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41.4**		5.04		mg/Kg			09/28/22 13:33	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

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)
880-19973-A-30-C MS	Matrix Spike	118	98
880-19973-A-30-D MSD	Matrix Spike Duplicate	123	104
890-3049-1	SS04	118	100
LCS 880-36205/1-A	Lab Control Sample	116	101
LCSD 880-36205/2-A	Lab Control Sample Dup	116	100
MB 880-36205/5-A	Method Blank	104	111

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)
880-19602-A-1-C MS	Matrix Spike	75	76
880-19602-A-1-D MSD	Matrix Spike Duplicate	81	82
890-3049-1	SS04	103	114
LCS 880-35514/2-A	Lab Control Sample	95	99
LCSD 880-35514/3-A	Lab Control Sample Dup	106	109
MB 880-35514/1-A	Method Blank	97	108

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36205/5-A
Matrix: Solid
Analysis Batch: 36228

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36205

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/05/22 16:50	10/07/22 00:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/05/22 16:50	10/07/22 00:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/05/22 16:50	10/07/22 00:47	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/05/22 16:50	10/07/22 00:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/05/22 16:50	10/07/22 00:47	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/05/22 16:50	10/07/22 00:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*10/05/22 16:50*	*10/07/22 00:47*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*10/05/22 16:50*	*10/07/22 00:47*	*1*

Lab Sample ID: LCS 880-36205/1-A
Matrix: Solid
Analysis Batch: 36228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36205

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09650		mg/Kg		97	70 - 130		
Toluene			0.100	0.1058		mg/Kg		106	70 - 130		
Ethylbenzene			0.100	0.1078		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2206		mg/Kg		110	70 - 130		
o-Xylene			0.100	0.1097		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-36205/2-A
Matrix: Solid
Analysis Batch: 36228

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36205

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08661		mg/Kg		87	70 - 130	11	35
Toluene			0.100	0.09946		mg/Kg		99	70 - 130	6	35
Ethylbenzene			0.100	0.1020		mg/Kg		102	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.2107		mg/Kg		105	70 - 130	5	35
o-Xylene			0.100	0.1060		mg/Kg		106	70 - 130	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 880-19973-A-30-C MS
Matrix: Solid
Analysis Batch: 36228

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36205

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.0998	0.09044		mg/Kg		91	70 - 130		
Toluene	<0.00201	U	0.0998	0.09994		mg/Kg		100	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

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

Lab Sample ID: 880-19973-A-30-C MS
Matrix: Solid
Analysis Batch: 36228

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36205

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.0998	0.1003		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2023		mg/Kg		101	70 - 130
o-Xylene	<0.00201	U	0.0998	0.1013		mg/Kg		102	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 880-19973-A-30-D MSD
Matrix: Solid
Analysis Batch: 36228

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 36205

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.09503		mg/Kg		96	70 - 130	5	35
Toluene	<0.00201	U	0.0990	0.1018		mg/Kg		103	70 - 130	2	35
Ethylbenzene	<0.00201	U	0.0990	0.1033		mg/Kg		104	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.2088		mg/Kg		105	70 - 130	3	35
o-Xylene	<0.00201	U	0.0990	0.1047		mg/Kg		106	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

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

Lab Sample ID: MB 880-35514/1-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35514

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		09/27/22 11:47	09/27/22 20:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/27/22 11:47	09/27/22 20:58	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/27/22 11:47	09/27/22 20:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*09/27/22 11:47*	*09/27/22 20:58*	*1*
o-Terphenyl	*108*		*70 - 130*	*09/27/22 11:47*	*09/27/22 20:58*	*1*

Lab Sample ID: LCS 880-35514/2-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35514

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	828.1		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	1000	844.7		mg/Kg		84	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

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

Lab Sample ID: LCS 880-35514/2-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35514

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: LCSD 880-35514/3-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35514

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	808.3		mg/Kg		81	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	940.8		mg/Kg		94	70 - 130	11	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	109		70 - 130

Lab Sample ID: 880-19602-A-1-C MS
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 35514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	957.9		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	825.9		mg/Kg		81	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	75		70 - 130
o-Terphenyl	76		70 - 130

Lab Sample ID: 880-19602-A-1-D MSD
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 35514

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1018		mg/Kg		99	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	892.8		mg/Kg		87	70 - 130	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	82		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-35475/1-A
Matrix: Solid
Analysis Batch: 35532

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			09/28/22 10:56	1

Lab Sample ID: LCS 880-35475/2-A
Matrix: Solid
Analysis Batch: 35532

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	234.7		mg/Kg		94	90 - 110		

Lab Sample ID: LCSD 880-35475/3-A
Matrix: Solid
Analysis Batch: 35532

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	234.5		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 890-3047-A-1-B MS
Matrix: Solid
Analysis Batch: 35532

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	230		249	494.5		mg/Kg		106	90 - 110		

Lab Sample ID: 890-3047-A-1-C MSD
Matrix: Solid
Analysis Batch: 35532

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	230		249	465.1		mg/Kg		94	90 - 110	6	20

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

GC VOA

Prep Batch: 36205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Total/NA	Solid	5035	
MB 880-36205/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36205/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36205/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-19973-A-30-C MS	Matrix Spike	Total/NA	Solid	5035	
880-19973-A-30-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Total/NA	Solid	8021B	36205
MB 880-36205/5-A	Method Blank	Total/NA	Solid	8021B	36205
LCS 880-36205/1-A	Lab Control Sample	Total/NA	Solid	8021B	36205
LCSD 880-36205/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36205
880-19973-A-30-C MS	Matrix Spike	Total/NA	Solid	8021B	36205
880-19973-A-30-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36205

Analysis Batch: 36361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 35460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Total/NA	Solid	8015B NM	35514
MB 880-35514/1-A	Method Blank	Total/NA	Solid	8015B NM	35514
LCS 880-35514/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	35514
LCSD 880-35514/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	35514
880-19602-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	35514
880-19602-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	35514

Prep Batch: 35514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-35514/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-35514/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-35514/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19602-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19602-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 35574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 35475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Soluble	Solid	DI Leach	
MB 880-35475/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

HPLC/IC (Continued)

Leach Batch: 35475 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 35532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3049-1	SS04	Soluble	Solid	300.0	35475
MB 880-35475/1-A	Method Blank	Soluble	Solid	300.0	35475
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	300.0	35475
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	35475
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	35475
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	35475

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Client Sample ID: SS04

Date Collected: 09/23/22 09:55
Date Received: 09/23/22 15:47

Lab Sample ID: 890-3049-1

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	36205	10/05/22 16:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36228	10/07/22 09:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36361	10/07/22 10:10	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35574	09/28/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	35514	09/27/22 11:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35460	09/28/22 04:03	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	35475	09/27/22 09:07	KS	EET MID
Soluble	Analysis	300.0		1			35532	09/28/22 13:33	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: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3049-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3049-1	SS04	Solid	09/23/22 09:55	09/23/22 15:47	6'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett 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:	989-854-0852	Email:	bbelill@ensolum.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:	PLU Pierce Canyon 17	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558116	Due Date:	
Project Location:	32.12442, -103.89635	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Meredith Roberts		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TAM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.6	
Total Containers:		Corrected Temperature:	4.4	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS04	S	9/23/2022	0955	6"	Grab	1		x	x	x

ANALYSIS REQUEST

890-3049 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident ID:
Napp2223832773
Cost Center:
1081061001

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		9/23/22 1547	4		
3			6		
5					

Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3049-1
SDG Number: 03E1558116

Login Number: 3049
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3049-1
SDG Number: 03E1558116

Login Number: 3049
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/27/22 10:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3050-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU Pierce Canyon 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/5/2022 11:37:44 AM

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

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

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

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Laboratory Job ID: 890-3050-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Job ID: 890-3050-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3050-1

Receipt
The sample was received on 9/23/2022 3:47 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

GC VOA
Method 8021B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 880-36062 and analytical batch 880-36055 recovered outside control limits for the following analytes: Benzene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36062 and analytical batch 880-36055 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCS 880-36062/1-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (890-3122-A-1-C MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS03 (890-3050-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
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: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Client Sample ID: SS03

Date Collected: 09/23/22 09:50
Date Received: 09/23/22 15:47
Sample Depth: 6'

Lab Sample ID: 890-3050-1

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		10/04/22 13:56	10/05/22 01:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:56	10/05/22 01:37	1
Ethylbenzene	<0.00200	U *+	0.00200		mg/Kg		10/04/22 13:56	10/05/22 01:37	1
m-Xylene & p-Xylene	<0.00399	U *+	0.00399		mg/Kg		10/04/22 13:56	10/05/22 01:37	1
o-Xylene	<0.00200	U *+	0.00200		mg/Kg		10/04/22 13:56	10/05/22 01:37	1
Xylenes, Total	<0.00399	U *+	0.00399		mg/Kg		10/04/22 13:56	10/05/22 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*140*	*S1+*	*70 - 130*	*10/04/22 13:56*	*10/05/22 01:37*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*10/04/22 13:56*	*10/05/22 01:37*	*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			10/05/22 12:21	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			09/28/22 09:31	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		09/27/22 11:47	09/28/22 04:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/27/22 11:47	09/28/22 04:24	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/27/22 11:47	09/28/22 04:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*09/27/22 11:47*	*09/28/22 04:24*	*1*
o-Terphenyl	*121*		*70 - 130*	*09/27/22 11:47*	*09/28/22 04:24*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**80.6**		4.96		mg/Kg			09/28/22 13:52	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3050-1	SS03	140 S1+	85
890-3122-A-1-C MS	Matrix Spike	135 S1+	97
890-3122-A-1-D MSD	Matrix Spike Duplicate	124	91
LCS 880-36062/1-A	Lab Control Sample	138 S1+	104
LCSD 880-36062/2-A	Lab Control Sample Dup	120	94
MB 880-36062/5-A	Method Blank	86	88

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)
880-19602-A-1-C MS	Matrix Spike	75	76
880-19602-A-1-D MSD	Matrix Spike Duplicate	81	82
890-3050-1	SS03	112	121
LCS 880-35514/2-A	Lab Control Sample	95	99
LCSD 880-35514/3-A	Lab Control Sample Dup	106	109
MB 880-35514/1-A	Method Blank	97	108

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36062/5-A
Matrix: Solid
Analysis Batch: 36055

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36062

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:56	10/04/22 16:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:56	10/04/22 16:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:56	10/04/22 16:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/04/22 13:56	10/04/22 16:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/22 13:56	10/04/22 16:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/04/22 13:56	10/04/22 16:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*10/04/22 13:56*	*10/04/22 16:01*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*10/04/22 13:56*	*10/04/22 16:01*	*1*

Lab Sample ID: LCS 880-36062/1-A
Matrix: Solid
Analysis Batch: 36055

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36062

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1337	*+	mg/Kg		134	70 - 130		
Toluene			0.100	0.1188		mg/Kg		119	70 - 130		
Ethylbenzene			0.100	0.1392	*+	mg/Kg		139	70 - 130		
m-Xylene & p-Xylene			0.200	0.2792	*+	mg/Kg		140	70 - 130		
o-Xylene			0.100	0.1441	*+	mg/Kg		144	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 880-36062/2-A
Matrix: Solid
Analysis Batch: 36055

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36062

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1174		mg/Kg		117	70 - 130	13	35
Toluene			0.100	0.1208		mg/Kg		121	70 - 130	2	35
Ethylbenzene			0.100	0.1192		mg/Kg		119	70 - 130	15	35
m-Xylene & p-Xylene			0.200	0.2376		mg/Kg		119	70 - 130	16	35
o-Xylene			0.100	0.1201		mg/Kg		120	70 - 130	18	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 890-3122-A-1-C MS
Matrix: Solid
Analysis Batch: 36055

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36062

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U F1 *+	0.0998	0.1312	F1	mg/Kg		131	70 - 130		
Toluene	<0.00198	U F1	0.0998	0.1402	F1	mg/Kg		140	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

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

Lab Sample ID: 890-3122-A-1-C MS
Matrix: Solid
Analysis Batch: 36055

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36062

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U F1 *+	0.0998	0.1398	F1	mg/Kg		140	70 - 130
m-Xylene & p-Xylene	<0.00396	U F1 *+	0.200	0.2793	F1	mg/Kg		140	70 - 130
o-Xylene	<0.00198	U F1 *+	0.0998	0.1352	F1	mg/Kg		136	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*135*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 890-3122-A-1-D MSD
Matrix: Solid
Analysis Batch: 36055

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 36062

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U F1 *+	0.0996	0.1158		mg/Kg		116	70 - 130	12	35
Toluene	<0.00198	U F1	0.0996	0.1192		mg/Kg		120	70 - 130	16	35
Ethylbenzene	<0.00198	U F1 *+	0.0996	0.1180		mg/Kg		119	70 - 130	17	35
m-Xylene & p-Xylene	<0.00396	U F1 *+	0.199	0.2364		mg/Kg		119	70 - 130	17	35
o-Xylene	<0.00198	U F1 *+	0.0996	0.1185		mg/Kg		119	70 - 130	13	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

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

Lab Sample ID: MB 880-35514/1-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35514

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		09/27/22 11:47	09/27/22 20:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/27/22 11:47	09/27/22 20:58	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/27/22 11:47	09/27/22 20:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*09/27/22 11:47*	*09/27/22 20:58*	*1*
o-Terphenyl	*108*		*70 - 130*	*09/27/22 11:47*	*09/27/22 20:58*	*1*

Lab Sample ID: LCS 880-35514/2-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35514

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	828.1		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)			1000	844.7		mg/Kg		84	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

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

Lab Sample ID: LCS 880-35514/2-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35514

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: LCSD 880-35514/3-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35514

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	808.3		mg/Kg		81	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	940.8		mg/Kg		94	70 - 130	11	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	109		70 - 130

Lab Sample ID: 880-19602-A-1-C MS
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 35514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	957.9		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	825.9		mg/Kg		81	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	75		70 - 130
o-Terphenyl	76		70 - 130

Lab Sample ID: 880-19602-A-1-D MSD
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 35514

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1018		mg/Kg		99	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	892.8		mg/Kg		87	70 - 130	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	82		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-35475/1-A
Matrix: Solid
Analysis Batch: 35532

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			09/28/22 10:56	1

Lab Sample ID: LCS 880-35475/2-A
Matrix: Solid
Analysis Batch: 35532

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	234.7		mg/Kg		94	90 - 110		

Lab Sample ID: LCSD 880-35475/3-A
Matrix: Solid
Analysis Batch: 35532

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	234.5		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 890-3047-A-1-B MS
Matrix: Solid
Analysis Batch: 35532

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	230		249	494.5		mg/Kg		106	90 - 110		

Lab Sample ID: 890-3047-A-1-C MSD
Matrix: Solid
Analysis Batch: 35532

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	230		249	465.1		mg/Kg		94	90 - 110	6	20

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

GC VOA

Analysis Batch: 36055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Total/NA	Solid	8021B	36062
MB 880-36062/5-A	Method Blank	Total/NA	Solid	8021B	36062
LCS 880-36062/1-A	Lab Control Sample	Total/NA	Solid	8021B	36062
LCSD 880-36062/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36062
890-3122-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	36062
890-3122-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36062

Prep Batch: 36062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Total/NA	Solid	5035	
MB 880-36062/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36062/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36062/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3122-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3122-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 35460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Total/NA	Solid	8015B NM	35514
MB 880-35514/1-A	Method Blank	Total/NA	Solid	8015B NM	35514
LCS 880-35514/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	35514
LCSD 880-35514/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	35514
880-19602-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	35514
880-19602-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	35514

Prep Batch: 35514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Total/NA	Solid	8015NM Prep	
MB 880-35514/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-35514/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-35514/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19602-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19602-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 35575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 35475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Soluble	Solid	DI Leach	
MB 880-35475/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

HPLC/IC (Continued)

Leach Batch: 35475 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 35532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3050-1	SS03	Soluble	Solid	300.0	35475
MB 880-35475/1-A	Method Blank	Soluble	Solid	300.0	35475
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	300.0	35475
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	35475
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	35475
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	35475

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Client Sample ID: SS03

Date Collected: 09/23/22 09:50
Date Received: 09/23/22 15:47

Lab Sample ID: 890-3050-1

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	36062	10/04/22 13:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36055	10/05/22 01:37	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			36180	10/05/22 12:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			35575	09/28/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	35514	09/27/22 11:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35460	09/28/22 04:24	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	35475	09/27/22 09:07	KS	EET MID
Soluble	Analysis	300.0		1			35532	09/28/22 13:52	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: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3050-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3050-1	SS03	Solid	09/23/22 09:50	09/23/22 15:47	6'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett 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:	989-854-0852	Email:	bbelill@ensolum.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:	PLU Pierce Canyon 17	Turn Around	
Project Number:	03E1558116	☑ Routine ☐ Rush	
Project Location:	32.12442, -103.89635	Due Date:	
Sampler's Name:	Meredith Roberts	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-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.6	
Total Containers:		Corrected Temperature:	4.4	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS03	S	9/23/2022	0950	6"	Grab	1		x	x	x

890-3050 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident ID:
Napp2223832773
Cost Center:
1081061001

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		9/23/22 1547			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3050-1
SDG Number: 03E1558116

Login Number: 3050
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3050-1
SDG Number: 03E1558116

Login Number: 3050
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/27/22 10:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3051-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU Pierce Canyon 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/7/2022 9:47:58 AM

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

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

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

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Laboratory Job ID: 890-3051-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum Job ID: 890-3051-1
Project/Site: PLU Pierce Canyon 17 SDG: 03E1558116

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
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: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Job ID: 890-3051-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3051-1

Receipt
The samples were received on 9/23/2022 3:47 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36073 and analytical batch 880-36225 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: (880-19602-A-1-G) and (880-19602-A-1-E MS). 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.

GC Semi VOA
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: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Client Sample ID: SS01

Lab Sample ID: 890-3051-1
Matrix: Solid
Date Collected: 09/23/22 09:40
Date Received: 09/23/22 15:47
Sample Depth: 6'

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		10/04/22 16:09	10/07/22 02:27	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/04/22 16:09	10/07/22 02:27	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/04/22 16:09	10/07/22 02:27	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		10/04/22 16:09	10/07/22 02:27	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		10/04/22 16:09	10/07/22 02:27	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		10/04/22 16:09	10/07/22 02:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*10/04/22 16:09*	*10/07/22 02:27*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*	*10/04/22 16:09*	*10/07/22 02:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			10/07/22 10:22	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**4940**		49.9		mg/Kg			09/28/22 09:31	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		09/27/22 11:47	09/28/22 05:28	1
Diesel Range Organics (Over C10-C28)	**4290**		49.9		mg/Kg		09/27/22 11:47	09/28/22 05:28	1
OII Range Organics (Over C28-C36)	**654**		49.9		mg/Kg		09/27/22 11:47	09/28/22 05:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*09/27/22 11:47*	*09/28/22 05:28*	*1*
o-Terphenyl	*108*		*70 - 130*	*09/27/22 11:47*	*09/28/22 05:28*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**216**		5.03		mg/Kg			09/28/22 13:58	1

Client Sample ID: SS02

Lab Sample ID: 890-3051-2
Matrix: Solid
Date Collected: 09/23/22 09:45
Date Received: 09/23/22 15:47
Sample Depth: 6'

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		10/04/22 16:09	10/07/22 02:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/07/22 02:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/07/22 02:48	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/04/22 16:09	10/07/22 02:48	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/07/22 02:48	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/04/22 16:09	10/07/22 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*10/04/22 16:09*	*10/07/22 02:48*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Client Sample ID: SS02

Date Collected: 09/23/22 09:45
Date Received: 09/23/22 15:47
Sample Depth: 6'

Lab Sample ID: 890-3051-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*10/04/22 16:09*	*10/07/22 02:48*	*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			10/07/22 10:22	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**1320**		49.9		mg/Kg			09/28/22 09:31	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		09/27/22 11:47	09/28/22 05:49	1
Diesel Range Organics (Over C10-C28)	**1110**		49.9		mg/Kg		09/27/22 11:47	09/28/22 05:49	1
OII Range Organics (Over C28-C36)	**212**		49.9		mg/Kg		09/27/22 11:47	09/28/22 05:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/27/22 11:47*	*09/28/22 05:49*	*1*
o-Terphenyl	*94*		*70 - 130*	*09/27/22 11:47*	*09/28/22 05:49*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**213**		5.01		mg/Kg			09/28/22 14:04	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

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)
880-19602-A-1-E MS	Matrix Spike	38 S1-	75
880-19602-A-1-F MSD	Matrix Spike Duplicate	102	95
890-3051-1	SS01	93	78
890-3051-2	SS02	112	100
LCS 880-36073/1-A	Lab Control Sample	91	100
LCSD 880-36073/2-A	Lab Control Sample Dup	85	94
MB 880-36073/5-A	Method Blank	98	85
MB 880-36203/5-A	Method Blank	97	82

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)
880-19602-A-1-C MS	Matrix Spike	75	76
880-19602-A-1-D MSD	Matrix Spike Duplicate	81	82
890-3051-1	SS01	102	108
890-3051-2	SS02	90	94
LCS 880-35514/2-A	Lab Control Sample	95	99
LCSD 880-35514/3-A	Lab Control Sample Dup	106	109
MB 880-35514/1-A	Method Blank	97	108

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36073/5-A
Matrix: Solid
Analysis Batch: 36225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36073

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/06/22 21:35	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/06/22 21:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/06/22 21:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/04/22 16:09	10/06/22 21:35	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/04/22 16:09	10/06/22 21:35	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/04/22 16:09	10/06/22 21:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*10/04/22 16:09*	*10/06/22 21:35*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*10/04/22 16:09*	*10/06/22 21:35*	*1*

Lab Sample ID: LCS 880-36073/1-A
Matrix: Solid
Analysis Batch: 36225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36073

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09262		mg/Kg		93	70 - 130		
Toluene			0.100	0.09281		mg/Kg		93	70 - 130		
Ethylbenzene			0.100	0.08488		mg/Kg		85	70 - 130		
m-Xylene & p-Xylene			0.200	0.1805		mg/Kg		90	70 - 130		
o-Xylene			0.100	0.09406		mg/Kg		94	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-36073/2-A
Matrix: Solid
Analysis Batch: 36225

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36073

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1015		mg/Kg		102	70 - 130	9	35
Toluene			0.100	0.1014		mg/Kg		101	70 - 130	9	35
Ethylbenzene			0.100	0.09329		mg/Kg		93	70 - 130	9	35
m-Xylene & p-Xylene			0.200	0.1918		mg/Kg		96	70 - 130	6	35
o-Xylene			0.100	0.09782		mg/Kg		98	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 880-19602-A-1-E MS
Matrix: Solid
Analysis Batch: 36225

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36073

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F2 F1	0.100	0.005462	F1	mg/Kg		5	70 - 130		
Toluene	<0.00201	U F2 F1	0.100	0.008924	F1	mg/Kg		9	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

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

Lab Sample ID: 880-19602-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 36225 — **Prep Batch: 36073**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F2 F1	0.100	0.006284	F1	mg/Kg		6	70 - 130
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.200	0.01043	F1	mg/Kg		5	70 - 130
o-Xylene	<0.00201	U F2 F1	0.100	0.006099	F1	mg/Kg		6	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*38*	*S1-*	*70 - 130*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*

Lab Sample ID: 880-19602-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 36225 — **Prep Batch: 36073**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F2 F1	0.0990	0.04086	F1 F2	mg/Kg		41	70 - 130	153	35
Toluene	<0.00201	U F2 F1	0.0990	0.05172	F1 F2	mg/Kg		52	70 - 130	141	35
Ethylbenzene	<0.00201	U F2 F1	0.0990	0.05451	F1 F2	mg/Kg		55	70 - 130	159	35
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.198	0.1184	F1 F2	mg/Kg		60	70 - 130	168	35
o-Xylene	<0.00201	U F2 F1	0.0990	0.06192	F1 F2	mg/Kg		63	70 - 130	164	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: MB 880-36203/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 36225 — **Prep Batch: 36203**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/05/22 16:37	10/06/22 10:14	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/05/22 16:37	10/06/22 10:14	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/05/22 16:37	10/06/22 10:14	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/05/22 16:37	10/06/22 10:14	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/05/22 16:37	10/06/22 10:14	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/05/22 16:37	10/06/22 10:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*10/05/22 16:37*	*10/06/22 10:14*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*	*10/05/22 16:37*	*10/06/22 10:14*	*1*

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

Lab Sample ID: MB 880-35514/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 35460 — **Prep Batch: 35514**

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		09/27/22 11:47	09/27/22 20:58	1

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

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

Lab Sample ID: MB 880-35514/1-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35514

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/27/22 11:47	09/27/22 20:58	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/27/22 11:47	09/27/22 20:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*09/27/22 11:47*	*09/27/22 20:58*	*1*
o-Terphenyl	*108*		*70 - 130*	*09/27/22 11:47*	*09/27/22 20:58*	*1*

Lab Sample ID: LCS 880-35514/2-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35514

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	828.1		mg/Kg		83	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	844.7		mg/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*99*		*70 - 130*

Lab Sample ID: LCSD 880-35514/3-A
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35514

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	808.3		mg/Kg		81	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	940.8		mg/Kg		94	70 - 130	11	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*109*		*70 - 130*

Lab Sample ID: 880-19602-A-1-C MS
Matrix: Solid
Analysis Batch: 35460

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 35514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	957.9		mg/Kg		93	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	998	825.9		mg/Kg		81	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*75*		*70 - 130*
o-Terphenyl	*76*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

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

Lab Sample ID: 880-19602-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 35460 — **Prep Batch: 35514**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1018		mg/Kg		99	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	892.8		mg/Kg		87	70 - 130	8	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*81*		*70 - 130*
o-Terphenyl	*82*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-35475/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 35532

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			09/28/22 10:56	1

Lab Sample ID: LCS 880-35475/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 35532

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	234.7		mg/Kg		94	90 - 110		

Lab Sample ID: LCSD 880-35475/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 35532

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	234.5		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 890-3047-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 35532

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	230		249	494.5		mg/Kg		106	90 - 110		

Lab Sample ID: 890-3047-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 35532

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	230		249	465.1		mg/Kg		94	90 - 110	6	20

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

GC VOA

Prep Batch: 36073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Total/NA	Solid	5035	
890-3051-2	SS02	Total/NA	Solid	5035	
MB 880-36073/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36073/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36073/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-19602-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-19602-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 36203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36203/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 36225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Total/NA	Solid	8021B	36073
890-3051-2	SS02	Total/NA	Solid	8021B	36073
MB 880-36073/5-A	Method Blank	Total/NA	Solid	8021B	36073
MB 880-36203/5-A	Method Blank	Total/NA	Solid	8021B	36203
LCS 880-36073/1-A	Lab Control Sample	Total/NA	Solid	8021B	36073
LCSD 880-36073/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36073
880-19602-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	36073
880-19602-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36073

Analysis Batch: 36371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Total/NA	Solid	Total BTEX	
890-3051-2	SS02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 35460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Total/NA	Solid	8015B NM	35514
890-3051-2	SS02	Total/NA	Solid	8015B NM	35514
MB 880-35514/1-A	Method Blank	Total/NA	Solid	8015B NM	35514
LCS 880-35514/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	35514
LCSD 880-35514/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	35514
880-19602-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	35514
880-19602-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	35514

Prep Batch: 35514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Total/NA	Solid	8015NM Prep	
890-3051-2	SS02	Total/NA	Solid	8015NM Prep	
MB 880-35514/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-35514/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-35514/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19602-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19602-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

GC Semi VOA

Analysis Batch: 35578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Total/NA	Solid	8015 NM	
890-3051-2	SS02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 35475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Soluble	Solid	DI Leach	
890-3051-2	SS02	Soluble	Solid	DI Leach	
MB 880-35475/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 35532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3051-1	SS01	Soluble	Solid	300.0	35475
890-3051-2	SS02	Soluble	Solid	300.0	35475
MB 880-35475/1-A	Method Blank	Soluble	Solid	300.0	35475
LCS 880-35475/2-A	Lab Control Sample	Soluble	Solid	300.0	35475
LCSD 880-35475/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	35475
890-3047-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	35475
890-3047-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	35475

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Client Sample ID: SS01

Date Collected: 09/23/22 09:40
Date Received: 09/23/22 15:47

Lab Sample ID: 890-3051-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	36073	10/04/22 16:09	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36225	10/07/22 02:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36371	10/07/22 10:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			35578	09/28/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	35514	09/27/22 11:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35460	09/28/22 05:28	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	35475	09/27/22 09:07	KS	EET MID
Soluble	Analysis	300.0		1			35532	09/28/22 13:58	CH	EET MID

Client Sample ID: SS02

Date Collected: 09/23/22 09:45
Date Received: 09/23/22 15:47

Lab Sample ID: 890-3051-2

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	36073	10/04/22 16:09	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36225	10/07/22 02:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36371	10/07/22 10:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			35578	09/28/22 09:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	35514	09/27/22 11:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35460	09/28/22 05:49	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	35475	09/27/22 09:07	KS	EET MID
Soluble	Analysis	300.0		1			35532	09/28/22 14:04	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: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3051-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3051-1	SS01	Solid	09/23/22 09:40	09/23/22 15:47	6'
890-3051-2	SS02	Solid	09/23/22 09:45	09/23/22 15:47	6'

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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:	Ben Belill	Bill to: (if different)	Garrett 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:	989-854-0852	Email:	bbelill@ensolum.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:	PLU Pierce Canyon 17	Turn Around	
Project Number:	03E1558116	☑ Routine ☐ Rush	
Project Location:	32.12442, -103.89635	Due Date:	
Sampler's Name:	Meredith Roberts	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:	TM-00
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.6
Total Containers:		Corrected Temperature:	4.4

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS01	S	9/23/2022	0940	6"	Grab	1		x	x	x
SS02	S	9/23/2022	0945	6"	G	1		x	x	x

Parameters

890-3051 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Incident ID:
Napp2223832773
Cost Center:
1081061001

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 Stef	9/23/22 1507	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3051-1
SDG Number: 03E1558116

Login Number: 3051
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3051-1
SDG Number: 03E1558116

Login Number: 3051
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/27/22 10:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3104-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU PC 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/10/2022 10:11:03 AM

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

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

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

Client: Ensolum
Project/Site: PLU PC 17

Laboratory Job ID: 890-3104-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Qualifiers

GC VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
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.
S1-	Surrogate recovery exceeds control limits, low 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: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Job ID: 890-3104-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3104-1

Receipt
The samples were received on 9/29/2022 8:36 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 1.4°C

GC VOA
Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-36449 and analytical batch 880-36442 recovered outside control limits for the following analytes: Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene Due to a misinjection.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCS 880-36449/1-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.

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-3104-A-1-B MS) and (890-3104-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-35819 and analytical batch 880-35738 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 880-35819 and analytical batch 880-35738 were outside control limits. Sample matrix interference and/or non-homogeneity are 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.

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: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Client Sample ID: PH01

Lab Sample ID: 890-3104-1
Matrix: Solid
Date Collected: 09/28/22 10:45
Date Received: 09/29/22 08:36
Sample Depth: 1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *- *1	0.00199		mg/Kg		10/08/22 12:21	10/09/22 07:52	1
Toluene	<0.00199	U *- *1	0.00199		mg/Kg		10/08/22 12:21	10/09/22 07:52	1
Ethylbenzene	<0.00199	U *- *1	0.00199		mg/Kg		10/08/22 12:21	10/09/22 07:52	1
m-Xylene & p-Xylene	<0.00398	U *- *1	0.00398		mg/Kg		10/08/22 12:21	10/09/22 07:52	1
o-Xylene	<0.00199	U *+ *1	0.00199		mg/Kg		10/08/22 12:21	10/09/22 07:52	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/08/22 12:21	10/09/22 07:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*10/08/22 12:21*	*10/09/22 07:52*	*1*
1,4-Difluorobenzene (Surr)	*71*		*70 - 130*	*10/08/22 12:21*	*10/09/22 07:52*	*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			10/10/22 10:40	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**662**		50.0		mg/Kg			10/03/22 11:45	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		09/30/22 14:01	09/30/22 20:15	1
Diesel Range Organics (Over C10-C28)	**563**	**F1**	50.0		mg/Kg		09/30/22 14:01	09/30/22 20:15	1
OII Range Organics (Over C28-C36)	**99.4**		50.0		mg/Kg		09/30/22 14:01	09/30/22 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*09/30/22 14:01*	*09/30/22 20:15*	*1*
o-Terphenyl	*73*		*70 - 130*	*09/30/22 14:01*	*09/30/22 20:15*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**81.9**		5.00		mg/Kg			10/06/22 01:20	1

Client Sample ID: PH02

Lab Sample ID: 890-3104-2
Matrix: Solid
Date Collected: 09/28/22 10:15
Date Received: 09/29/22 08:36
Sample Depth: 1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U *- *1	0.00201		mg/Kg		10/08/22 12:21	10/09/22 08:13	1
Toluene	<0.00201	U *- *1	0.00201		mg/Kg		10/08/22 12:21	10/09/22 08:13	1
Ethylbenzene	<0.00201	U *- *1	0.00201		mg/Kg		10/08/22 12:21	10/09/22 08:13	1
m-Xylene & p-Xylene	<0.00402	U *- *1	0.00402		mg/Kg		10/08/22 12:21	10/09/22 08:13	1
o-Xylene	<0.00201	U *+ *1	0.00201		mg/Kg		10/08/22 12:21	10/09/22 08:13	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/08/22 12:21	10/09/22 08:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*	*10/08/22 12:21*	*10/09/22 08:13*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Client Sample ID: PH02

Date Collected: 09/28/22 10:15
Date Received: 09/29/22 08:36
Sample Depth: 1

Lab Sample ID: 890-3104-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*73*		*70 - 130*	*10/08/22 12:21*	*10/09/22 08:13*	*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			10/10/22 10:40	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			10/03/22 11:45	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 *1	49.8		mg/Kg		09/30/22 14:01	09/30/22 21:19	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/30/22 14:01	09/30/22 21:19	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/30/22 14:01	09/30/22 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*09/30/22 14:01*	*09/30/22 21:19*	*1*
o-Terphenyl	*85*		*70 - 130*	*09/30/22 14:01*	*09/30/22 21:19*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.6**		4.97		mg/Kg			10/06/22 01:37	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3089-A-1-F MS	Matrix Spike	106	91
890-3089-A-1-G MSD	Matrix Spike Duplicate	96	81
890-3104-1	PH01	82	71
890-3104-2	PH02	77	73
LCS 880-36449/1-A	Lab Control Sample	171 S1+	117
LCSD 880-36449/2-A	Lab Control Sample Dup	98	94
MB 880-36293/5-A	Method Blank	83	92
MB 880-36449/5-A	Method Blank	87	87

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)
890-3104-1	PH01	77	73
890-3104-1 MS	PH01	69 S1-	61 S1-
890-3104-1 MSD	PH01	71	61 S1-
890-3104-2	PH02	83	85
LCS 880-35819/2-A	Lab Control Sample	106	110
LCSD 880-35819/3-A	Lab Control Sample Dup	94	98
MB 880-35819/1-A	Method Blank	108	116

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36293/5-A
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36293

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/06/22 15:51	10/08/22 15:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/06/22 15:51	10/08/22 15:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/06/22 15:51	10/08/22 15:47	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/06/22 15:51	10/08/22 15:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/06/22 15:51	10/08/22 15:47	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/06/22 15:51	10/08/22 15:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*	*10/06/22 15:51*	*10/08/22 15:47*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/06/22 15:51*	*10/08/22 15:47*	*1*

Lab Sample ID: MB 880-36449/5-A
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36449

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/08/22 12:21	10/09/22 02:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/08/22 12:21	10/09/22 02:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/08/22 12:21	10/09/22 02:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/08/22 12:21	10/09/22 02:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/08/22 12:21	10/09/22 02:23	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/08/22 12:21	10/09/22 02:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*10/08/22 12:21*	*10/09/22 02:23*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/08/22 12:21*	*10/09/22 02:23*	*1*

Lab Sample ID: LCS 880-36449/1-A
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36449

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.01884	*-	mg/Kg		19	70 - 130		
Toluene			0.100	0.01832	*-	mg/Kg		18	70 - 130		
Ethylbenzene			0.100	0.02039	*-	mg/Kg		20	70 - 130		
m-Xylene & p-Xylene			0.200	0.05373	*-	mg/Kg		27	70 - 130		
o-Xylene			0.100	0.3177	*+	mg/Kg		318	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*171*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*

Lab Sample ID: LCSD 880-36449/2-A
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36449

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09908	*1	mg/Kg		99	70 - 130	136	35

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

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

Lab Sample ID: LCSD 880-36449/2-A
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36449

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.08768	*1	mg/Kg		88	70 - 130	131	35
Ethylbenzene			0.100	0.08396	*1	mg/Kg		84	70 - 130	122	35
m-Xylene & p-Xylene			0.200	0.1727	*1	mg/Kg		86	70 - 130	105	35
o-Xylene			0.100	0.09883	*1	mg/Kg		99	70 - 130	105	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 890-3089-A-1-F MS
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 36449

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U *- *1 F1	0.0998	0.04456	F1	mg/Kg		45	70 - 130
Toluene	<0.00202	U *- *1 F1	0.0998	0.04470	F1	mg/Kg		45	70 - 130
Ethylbenzene	<0.00202	U *- *1 F1	0.0998	0.04470	F1	mg/Kg		45	70 - 130
m-Xylene & p-Xylene	<0.00403	U *- *1 F1	0.200	0.07327	F1	mg/Kg		37	70 - 130
o-Xylene	<0.00202	U *+ *1 F1	0.0998	0.04861	F1	mg/Kg		49	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 890-3089-A-1-G MSD
Matrix: Solid
Analysis Batch: 36442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 36449

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U *- *1 F1	0.101	0.03882	F1	mg/Kg		39	70 - 130	14	35
Toluene	<0.00202	U *- *1 F1	0.101	0.04506	F1	mg/Kg		45	70 - 130	1	35
Ethylbenzene	<0.00202	U *- *1 F1	0.101	0.04374	F1	mg/Kg		43	70 - 130	2	35
m-Xylene & p-Xylene	<0.00403	U *- *1 F1	0.201	0.06634	F1	mg/Kg		33	70 - 130	10	35
o-Xylene	<0.00202	U *+ *1 F1	0.101	0.04504	F1	mg/Kg		45	70 - 130	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*

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

Lab Sample ID: MB 880-35819/1-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35819

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		09/30/22 14:01	09/30/22 19:10	1

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

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

Lab Sample ID: MB 880-35819/1-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35819

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 19:10	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 19:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*108*		*70 - 130*	*09/30/22 14:01*	*09/30/22 19:10*	*1*
o-Terphenyl	*116*		*70 - 130*	*09/30/22 14:01*	*09/30/22 19:10*	*1*

Lab Sample ID: LCS 880-35819/2-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35819

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1130		mg/Kg		113	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	983.8		mg/Kg		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: LCSD 880-35819/3-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35819

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	805.1	*1	mg/Kg		81	70 - 130	34	20
Diesel Range Organics (Over C10-C28)			1000	871.5		mg/Kg		87	70 - 130	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*94*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: 890-3104-1 MS
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: PH01
Prep Type: Total/NA
Prep Batch: 35819

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	998	887.3		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	563	F1	998	954.4	F1	mg/Kg		39	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*69*	*S1-*	*70 - 130*
o-Terphenyl	*61*	*S1-*	*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

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

Lab Sample ID: 890-3104-1 MSD
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: PH01
Prep Type: Total/NA
Prep Batch: 35819

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	999	976.8		mg/Kg		96	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	563	F1	999	983.3	F1	mg/Kg		42	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*71*		*70 - 130*
o-Terphenyl	*61*	*S1-*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-36004/1-A
Matrix: Solid
Analysis Batch: 36198

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			10/06/22 01:02	1

Lab Sample ID: LCS 880-36004/2-A
Matrix: Solid
Analysis Batch: 36198

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	257.6		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-36004/3-A
Matrix: Solid
Analysis Batch: 36198

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	248.5		mg/Kg		99	90 - 110	4	20

Lab Sample ID: 890-3104-1 MS
Matrix: Solid
Analysis Batch: 36198

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	81.9		250	312.0		mg/Kg		92	90 - 110		

Lab Sample ID: 890-3104-1 MSD
Matrix: Solid
Analysis Batch: 36198

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	81.9		250	326.2		mg/Kg		98	90 - 110	4	20

QC Association Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

GC VOA

Prep Batch: 36293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36293/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 36442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Total/NA	Solid	8021B	36449
890-3104-2	PH02	Total/NA	Solid	8021B	36449
MB 880-36293/5-A	Method Blank	Total/NA	Solid	8021B	36293
MB 880-36449/5-A	Method Blank	Total/NA	Solid	8021B	36449
LCS 880-36449/1-A	Lab Control Sample	Total/NA	Solid	8021B	36449
LCSD 880-36449/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36449
890-3089-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	36449
890-3089-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36449

Prep Batch: 36449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Total/NA	Solid	5035	
890-3104-2	PH02	Total/NA	Solid	5035	
MB 880-36449/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36449/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36449/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3089-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-3089-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 36560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Total/NA	Solid	Total BTEX	
890-3104-2	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 35738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Total/NA	Solid	8015B NM	35819
890-3104-2	PH02	Total/NA	Solid	8015B NM	35819
MB 880-35819/1-A	Method Blank	Total/NA	Solid	8015B NM	35819
LCS 880-35819/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	35819
LCSD 880-35819/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	35819
890-3104-1 MS	PH01	Total/NA	Solid	8015B NM	35819
890-3104-1 MSD	PH01	Total/NA	Solid	8015B NM	35819

Prep Batch: 35819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Total/NA	Solid	8015NM Prep	
890-3104-2	PH02	Total/NA	Solid	8015NM Prep	
MB 880-35819/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-35819/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-35819/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3104-1 MS	PH01	Total/NA	Solid	8015NM Prep	
890-3104-1 MSD	PH01	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

GC Semi VOA

Analysis Batch: 35979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Total/NA	Solid	8015 NM	
890-3104-2	PH02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 36004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Soluble	Solid	DI Leach	
890-3104-2	PH02	Soluble	Solid	DI Leach	
MB 880-36004/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36004/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36004/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3104-1 MS	PH01	Soluble	Solid	DI Leach	
890-3104-1 MSD	PH01	Soluble	Solid	DI Leach	

Analysis Batch: 36198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-1	PH01	Soluble	Solid	300.0	36004
890-3104-2	PH02	Soluble	Solid	300.0	36004
MB 880-36004/1-A	Method Blank	Soluble	Solid	300.0	36004
LCS 880-36004/2-A	Lab Control Sample	Soluble	Solid	300.0	36004
LCSD 880-36004/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36004
890-3104-1 MS	PH01	Soluble	Solid	300.0	36004
890-3104-1 MSD	PH01	Soluble	Solid	300.0	36004

Lab Chronicle

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Client Sample ID: PH01

Date Collected: 09/28/22 10:45
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3104-1

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			5.02 g	5 mL	36449	10/08/22 12:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36442	10/09/22 07:52	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			36560	10/10/22 10:40	AJ	EET MID
Total/NA	Analysis	8015 NM		1			35979	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 20:15	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 01:20	CH	EET MID

Client Sample ID: PH02

Date Collected: 09/28/22 10:15
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3104-2

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	36449	10/08/22 12:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36442	10/09/22 08:13	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			36560	10/10/22 10:40	AJ	EET MID
Total/NA	Analysis	8015 NM		1			35979	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 21:19	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 01:37	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: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3104-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3104-1	PH01	Solid	09/28/22 10:45	09/29/22 08:36	1
890-3104-2	PH02	Solid	09/28/22 10:15	09/29/22 08:36	1

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Chain of Custody

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

Work Order No: ____________

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989·854·0852	Email:	bbelill@ensolum.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:	PLU PC 17	Turn Around	
Project Number:	03E1558116	☑ Routine	☐ Rush
Project Location:	32.12442,-103.89635	Due Date:	
Sampler's Name:	Meredith Roberts	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:	TNM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	1.6
Total Containers:		Corrected Temperature:	1.4

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	TPH	BTEX	Chlorides	Sample Comments
PH01	S	9/28/22	1045	1'	G	1	X	X	X	Incident #: nAPP2223832773
PH02	S	9/28/22	1015	1'	G	1	X	X	X	Cost Center: 1081061001

MR

Preservative Codes

None: NO — DI Water: H_2O
Cool: Cool — MeOH: Me
HCL: HC — HNO_3: HN
H_2SO_4: H_2 — NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: NaSO$_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

890-3104 Chain of Custody

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[signature]	[signature]	9/29/22 0810	2	[signature]		9.29.22 834
3				4			
5				6			

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3104-1
SDG Number: 03E1558116

Login Number: 3104
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3104-1
SDG Number: 03E1558116

Login Number: 3104
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/30/22 10:28 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3105-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU PC 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/11/2022 1:33:14 PM

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

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

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

Client: Ensolum
Project/Site: PLU PC 17

Laboratory Job ID: 890-3105-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Job ID: 890-3105-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3105-1

Receipt
The samples were received on 9/29/2022 8:36 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 1.4°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-36450 and analytical batch 880-36624 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: FS02 (890-3105-2) and FS03 (890-3105-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: o-Xylene biased high in LCSD. Since only an acceptable LCS is required per the method, the data has been qualified and reported.(LCSD 880-36450/2-A)

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-3104-A-1-B MS) and (890-3104-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-35819 and analytical batch 880-35738 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 880-35819 and analytical batch 880-35738 were outside control limits. Sample matrix interference and/or non-homogeneity are 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.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-35811 and analytical batch 880-36008 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS01

Lab Sample ID: 890-3105-1
Matrix: Solid
Date Collected: 09/28/22 16:15
Date Received: 09/29/22 08:36
Sample Depth: 1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U F1 F2	0.00202		mg/Kg		10/08/22 13:26	10/11/22 11:26	1
Toluene	<0.00202	U F1 F2	0.00202		mg/Kg		10/08/22 13:26	10/11/22 11:26	1
Ethylbenzene	<0.00202	U F1 F2	0.00202		mg/Kg		10/08/22 13:26	10/11/22 11:26	1
m-Xylene & p-Xylene	<0.00403	U F1 F2	0.00403		mg/Kg		10/08/22 13:26	10/11/22 11:26	1
o-Xylene	<0.00202	U *+ F1 F2	0.00202		mg/Kg		10/08/22 13:26	10/11/22 11:26	1
Xylenes, Total	<0.00403	U F1 F2	0.00403		mg/Kg		10/08/22 13:26	10/11/22 11:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*	*10/08/22 13:26*	*10/11/22 11:26*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*10/08/22 13:26*	*10/11/22 11:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			10/11/22 12:45	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			10/03/22 11:45	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		09/30/22 14:01	09/30/22 22:03	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/30/22 14:01	09/30/22 22:03	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/30/22 14:01	09/30/22 22:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*09/30/22 14:01*	*09/30/22 22:03*	*1*
o-Terphenyl	*88*		*70 - 130*	*09/30/22 14:01*	*09/30/22 22:03*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**298**		5.00		mg/Kg			10/04/22 05:15	1

Client Sample ID: FS02

Lab Sample ID: 890-3105-2
Matrix: Solid
Date Collected: 09/28/22 15:45
Date Received: 09/29/22 08:36
Sample Depth: 1

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		10/08/22 13:26	10/11/22 12:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 12:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 12:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/08/22 13:26	10/11/22 12:07	1
o-Xylene	<0.00200	U *+	0.00200		mg/Kg		10/08/22 13:26	10/11/22 12:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/08/22 13:26	10/11/22 12:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*57*	*S1-*	*70 - 130*	*10/08/22 13:26*	*10/11/22 12:07*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS02

Lab Sample ID: 890-3105-2
Matrix: Solid
Date Collected: 09/28/22 15:45
Date Received: 09/29/22 08:36
Sample Depth: 1

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*10/08/22 13:26*	*10/11/22 12:07*	*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			10/11/22 12:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**105**		50.0	mg/Kg			10/03/22 11:45	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		09/30/22 14:01	09/30/22 22:24	1
Diesel Range Organics (Over C10-C28)	**105**		50.0	mg/Kg		09/30/22 14:01	09/30/22 22:24	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/30/22 14:01	09/30/22 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*09/30/22 14:01*	*09/30/22 22:24*	*1*
o-Terphenyl	*93*		*70 - 130*	*09/30/22 14:01*	*09/30/22 22:24*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**339**		5.01	mg/Kg			10/04/22 05:20	1

Client Sample ID: FS03

Lab Sample ID: 890-3105-3
Matrix: Solid
Date Collected: 09/28/22 16:20
Date Received: 09/29/22 08:36
Sample Depth: 1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		10/08/22 13:26	10/11/22 12:27	1
Toluene	<0.00198	U	0.00198	mg/Kg		10/08/22 13:26	10/11/22 12:27	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		10/08/22 13:26	10/11/22 12:27	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		10/08/22 13:26	10/11/22 12:27	1
o-Xylene	<0.00198	U *+	0.00198	mg/Kg		10/08/22 13:26	10/11/22 12:27	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		10/08/22 13:26	10/11/22 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*52*	*S1-*	*70 - 130*	*10/08/22 13:26*	*10/11/22 12:27*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/08/22 13:26*	*10/11/22 12:27*	*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			10/11/22 12:45	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			10/03/22 11:45	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS03

Lab Sample ID: 890-3105-3
Matrix: Solid
Date Collected: 09/28/22 16:20
Date Received: 09/29/22 08:36
Sample Depth: 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		09/30/22 14:01	09/30/22 22:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 22:45	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 22:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*09/30/22 14:01*	*09/30/22 22:45*	*1*
o-Terphenyl	*94*		*70 - 130*	*09/30/22 14:01*	*09/30/22 22:45*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**271**		4.95		mg/Kg			10/06/22 01:43	1

Client Sample ID: FS04

Lab Sample ID: 890-3105-4
Matrix: Solid
Date Collected: 09/28/22 15:55
Date Received: 09/29/22 08:36
Sample Depth: 1

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		10/08/22 13:26	10/11/22 12:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 12:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 12:48	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/08/22 13:26	10/11/22 12:48	1
o-Xylene	<0.00200	U *+	0.00200		mg/Kg		10/08/22 13:26	10/11/22 12:48	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/08/22 13:26	10/11/22 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*10/08/22 13:26*	*10/11/22 12:48*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*10/08/22 13:26*	*10/11/22 12:48*	*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			10/11/22 12:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**89.5**		50.0		mg/Kg			10/03/22 11:45	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		09/30/22 14:01	09/30/22 23:06	1
Diesel Range Organics (Over C10-C28)	**89.5**		50.0		mg/Kg		09/30/22 14:01	09/30/22 23:06	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 23:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*09/30/22 14:01*	*09/30/22 23:06*	*1*
o-Terphenyl	*109*		*70 - 130*	*09/30/22 14:01*	*09/30/22 23:06*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS04

Lab Sample ID: 890-3105-4
Matrix: Solid
Date Collected: 09/28/22 15:55
Date Received: 09/29/22 08:36
Sample Depth: 1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	650		4.95		mg/Kg			10/06/22 01:49	1

Client Sample ID: FS05

Lab Sample ID: 890-3105-5
Matrix: Solid
Date Collected: 09/28/22 16:25
Date Received: 09/29/22 08:36
Sample Depth: 1

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		10/08/22 13:26	10/11/22 13:08	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/08/22 13:26	10/11/22 13:08	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/08/22 13:26	10/11/22 13:08	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/08/22 13:26	10/11/22 13:08	1
o-Xylene	<0.00199	U *+	0.00199		mg/Kg		10/08/22 13:26	10/11/22 13:08	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/08/22 13:26	10/11/22 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*70 - 130*	*10/08/22 13:26*	*10/11/22 13:08*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/08/22 13:26*	*10/11/22 13:08*	*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			10/11/22 12:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	53.2		49.9		mg/Kg			10/03/22 11:45	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		09/30/22 14:01	09/30/22 23:28	1
Diesel Range Organics (Over C10-C28)	53.2		49.9		mg/Kg		09/30/22 14:01	09/30/22 23:28	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/30/22 14:01	09/30/22 23:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*09/30/22 14:01*	*09/30/22 23:28*	*1*
o-Terphenyl	*79*		*70 - 130*	*09/30/22 14:01*	*09/30/22 23:28*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	639		5.01		mg/Kg			10/06/22 01:55	1

Client Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS06

Lab Sample ID: 890-3105-6
Matrix: Solid
Date Collected: 09/28/22 16:05
Date Received: 09/29/22 08:36
Sample Depth: 1

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		10/08/22 13:26	10/11/22 13:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 13:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 13:29	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/08/22 13:26	10/11/22 13:29	1
o-Xylene	<0.00200	U *+	0.00200		mg/Kg		10/08/22 13:26	10/11/22 13:29	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/08/22 13:26	10/11/22 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*10/08/22 13:26*	*10/11/22 13:29*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*10/08/22 13:26*	*10/11/22 13:29*	*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			10/11/22 12:45	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			10/03/22 11:45	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		09/30/22 14:01	09/30/22 23:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 23:49	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/30/22 14:01	09/30/22 23:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*09/30/22 14:01*	*09/30/22 23:49*	*1*
o-Terphenyl	*85*		*70 - 130*	*09/30/22 14:01*	*09/30/22 23:49*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**74.4**		5.03		mg/Kg			10/06/22 02:12	1

Client Sample ID: FS07

Lab Sample ID: 890-3105-7
Matrix: Solid
Date Collected: 09/28/22 16:10
Date Received: 09/29/22 08:36
Sample Depth: 1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		10/08/22 13:26	10/11/22 13:49	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/08/22 13:26	10/11/22 13:49	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/08/22 13:26	10/11/22 13:49	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		10/08/22 13:26	10/11/22 13:49	1
o-Xylene	<0.00198	U *+	0.00198		mg/Kg		10/08/22 13:26	10/11/22 13:49	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		10/08/22 13:26	10/11/22 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*70 - 130*	*10/08/22 13:26*	*10/11/22 13:49*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS07
Date Collected: 09/28/22 16:10
Date Received: 09/29/22 08:36
Sample Depth: 1

Lab Sample ID: 890-3105-7
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*10/08/22 13:26*	*10/11/22 13:49*	*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			10/11/22 12:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**195**		49.9		mg/Kg			10/03/22 11:45	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		09/30/22 14:01	10/01/22 00:11	1
Diesel Range Organics (Over C10-C28)	**195**		49.9		mg/Kg		09/30/22 14:01	10/01/22 00:11	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/30/22 14:01	10/01/22 00:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*09/30/22 14:01*	*10/01/22 00:11*	*1*
o-Terphenyl	*84*		*70 - 130*	*09/30/22 14:01*	*10/01/22 00:11*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**287**		4.97		mg/Kg			10/06/22 02:18	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3105-1	FS01	77	85
890-3105-1 MS	FS01	85	101
890-3105-1 MSD	FS01	82	100
890-3105-2	FS02	57 S1-	100
890-3105-3	FS03	52 S1-	105
890-3105-4	FS04	93	95
890-3105-5	FS05	73	87
890-3105-6	FS06	97	95
890-3105-7	FS07	74	96
LCS 880-36450/1-A	Lab Control Sample	111	99
LCSD 880-36450/2-A	Lab Control Sample Dup	122	106
MB 880-36450/5-A	Method Blank	88	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3104-A-1-B MS	Matrix Spike	69 S1-	61 S1-
890-3104-A-1-C MSD	Matrix Spike Duplicate	71	61 S1-
890-3105-1	FS01	88	88
890-3105-2	FS02	92	93
890-3105-3	FS03	91	94
890-3105-4	FS04	102	109
890-3105-5	FS05	83	79
890-3105-6	FS06	82	85
890-3105-7	FS07	83	84
LCS 880-35819/2-A	Lab Control Sample	106	110
LCSD 880-35819/3-A	Lab Control Sample Dup	94	98
MB 880-35819/1-A	Method Blank	108	116

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-36450/5-A
Matrix: Solid
Analysis Batch: 36624

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 36450

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 10:43	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 10:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 10:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/08/22 13:26	10/11/22 10:43	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/08/22 13:26	10/11/22 10:43	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/08/22 13:26	10/11/22 10:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*10/08/22 13:26*	*10/11/22 10:43*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*10/08/22 13:26*	*10/11/22 10:43*	*1*

Lab Sample ID: LCS 880-36450/1-A
Matrix: Solid
Analysis Batch: 36624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 36450

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08634		mg/Kg		86	70 - 130		
Toluene			0.100	0.08646		mg/Kg		86	70 - 130		
Ethylbenzene			0.100	0.08708		mg/Kg		87	70 - 130		
m-Xylene & p-Xylene			0.200	0.1903		mg/Kg		95	70 - 130		
o-Xylene			0.100	0.1090		mg/Kg		109	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 880-36450/2-A
Matrix: Solid
Analysis Batch: 36624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 36450

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09637		mg/Kg		96	70 - 130	11	35
Toluene			0.100	0.09772		mg/Kg		98	70 - 130	12	35
Ethylbenzene			0.100	0.1077		mg/Kg		108	70 - 130	21	35
m-Xylene & p-Xylene			0.200	0.2381		mg/Kg		119	70 - 130	22	35
o-Xylene			0.100	0.1334	*+	mg/Kg		133	70 - 130	20	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 890-3105-1 MS
Matrix: Solid
Analysis Batch: 36624

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 36450

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U F1 F2	0.0998	0.01209	F1	mg/Kg		12	70 - 130		
Toluene	<0.00202	U F1 F2	0.0998	0.007769	F1	mg/Kg		8	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

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

Lab Sample ID: 890-3105-1 MS
Matrix: Solid
Analysis Batch: 36624

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 36450

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U F1 F2	0.0998	0.008280	F1	mg/Kg		8	70 - 130
m-Xylene & p-Xylene	<0.00403	U F1 F2	0.200	0.01613	F1	mg/Kg		8	70 - 130
o-Xylene	<0.00202	U *+ F1 F2	0.0998	0.01470	F1	mg/Kg		15	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 890-3105-1 MSD
Matrix: Solid
Analysis Batch: 36624

Client Sample ID: FS01
Prep Type: Total/NA
Prep Batch: 36450

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1 F2	0.0996	0.003787	F1 F2	mg/Kg		4	70 - 130	105	35
Toluene	<0.00202	U F1 F2	0.0996	0.002329	F1 F2	mg/Kg		2	70 - 130	108	35
Ethylbenzene	<0.00202	U F1 F2	0.0996	0.002969	F1 F2	mg/Kg		3	70 - 130	94	35
m-Xylene & p-Xylene	<0.00403	U F1 F2	0.199	0.006455	F1 F2	mg/Kg		3	70 - 130	86	35
o-Xylene	<0.00202	U *+ F1 F2	0.0996	0.004802	F1 F2	mg/Kg		5	70 - 130	102	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

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

Lab Sample ID: MB 880-35819/1-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 35819

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		09/30/22 14:01	09/30/22 19:10	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		09/30/22 14:01	09/30/22 19:10	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		09/30/22 14:01	09/30/22 19:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*108*		*70 - 130*	*09/30/22 14:01*	*09/30/22 19:10*	*1*
o-Terphenyl	*116*		*70 - 130*	*09/30/22 14:01*	*09/30/22 19:10*	*1*

Lab Sample ID: LCS 880-35819/2-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35819

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1130		mg/Kg		113	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

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

Lab Sample ID: LCS 880-35819/2-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 35819

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics (Over C10-C28)			1000	983.8		mg/Kg		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*106*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: LCSD 880-35819/3-A
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 35819

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	805.1	*1	mg/Kg		81	70 - 130	34	20
Diesel Range Organics (Over C10-C28)			1000	871.5		mg/Kg		87	70 - 130	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*94*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: 890-3104-A-1-B MS
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 35819

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	998	887.3		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	563	F1	998	954.4	F1	mg/Kg		39	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*69*	*S1-*	*70 - 130*
o-Terphenyl	*61*	*S1-*	*70 - 130*

Lab Sample ID: 890-3104-A-1-C MSD
Matrix: Solid
Analysis Batch: 35738

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 35819

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	999	976.8		mg/Kg		96	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	563	F1	999	983.3	F1	mg/Kg		42	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*71*		*70 - 130*
o-Terphenyl	*61*	*S1-*	*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-35811/1-A
Matrix: Solid
Analysis Batch: 36008

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			10/04/22 02:55	1

Lab Sample ID: LCS 880-35811/2-A
Matrix: Solid
Analysis Batch: 36008

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	248.2		mg/Kg		99	90 - 110		

Lab Sample ID: LCSD 880-35811/3-A
Matrix: Solid
Analysis Batch: 36008

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	263.8		mg/Kg		106	90 - 110	6	20

Lab Sample ID: 880-19836-A-5-B MS
Matrix: Solid
Analysis Batch: 36008

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	330	F1	248	531.6	F1	mg/Kg		82	90 - 110		

Lab Sample ID: 880-19836-A-5-C MSD
Matrix: Solid
Analysis Batch: 36008

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	330	F1	248	552.4		mg/Kg		90	90 - 110	4	20

Lab Sample ID: MB 880-36004/1-A
Matrix: Solid
Analysis Batch: 36198

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			10/06/22 01:02	1

Lab Sample ID: LCS 880-36004/2-A
Matrix: Solid
Analysis Batch: 36198

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	257.6		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-36004/3-A
Matrix: Solid
Analysis Batch: 36198

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	248.5		mg/Kg		99	90 - 110	4	20

QC Sample Results

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 890-3104-A-1-E MS
Matrix: Solid
Analysis Batch: 36198

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	81.9		250	312.0		mg/Kg		92	90 - 110

Lab Sample ID: 890-3104-A-1-F MSD
Matrix: Solid
Analysis Batch: 36198

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	81.9		250	326.2		mg/Kg		98	90 - 110	4	20

QC Association Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

GC VOA

Prep Batch: 36450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Total/NA	Solid	5035	
890-3105-2	FS02	Total/NA	Solid	5035	
890-3105-3	FS03	Total/NA	Solid	5035	
890-3105-4	FS04	Total/NA	Solid	5035	
890-3105-5	FS05	Total/NA	Solid	5035	
890-3105-6	FS06	Total/NA	Solid	5035	
890-3105-7	FS07	Total/NA	Solid	5035	
MB 880-36450/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36450/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36450/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3105-1 MS	FS01	Total/NA	Solid	5035	
890-3105-1 MSD	FS01	Total/NA	Solid	5035	

Analysis Batch: 36624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Total/NA	Solid	8021B	36450
890-3105-2	FS02	Total/NA	Solid	8021B	36450
890-3105-3	FS03	Total/NA	Solid	8021B	36450
890-3105-4	FS04	Total/NA	Solid	8021B	36450
890-3105-5	FS05	Total/NA	Solid	8021B	36450
890-3105-6	FS06	Total/NA	Solid	8021B	36450
890-3105-7	FS07	Total/NA	Solid	8021B	36450
MB 880-36450/5-A	Method Blank	Total/NA	Solid	8021B	36450
LCS 880-36450/1-A	Lab Control Sample	Total/NA	Solid	8021B	36450
LCSD 880-36450/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36450
890-3105-1 MS	FS01	Total/NA	Solid	8021B	36450
890-3105-1 MSD	FS01	Total/NA	Solid	8021B	36450

Analysis Batch: 36675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Total/NA	Solid	Total BTEX	
890-3105-2	FS02	Total/NA	Solid	Total BTEX	
890-3105-3	FS03	Total/NA	Solid	Total BTEX	
890-3105-4	FS04	Total/NA	Solid	Total BTEX	
890-3105-5	FS05	Total/NA	Solid	Total BTEX	
890-3105-6	FS06	Total/NA	Solid	Total BTEX	
890-3105-7	FS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 35738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Total/NA	Solid	8015B NM	35819
890-3105-2	FS02	Total/NA	Solid	8015B NM	35819
890-3105-3	FS03	Total/NA	Solid	8015B NM	35819
890-3105-4	FS04	Total/NA	Solid	8015B NM	35819
890-3105-5	FS05	Total/NA	Solid	8015B NM	35819
890-3105-6	FS06	Total/NA	Solid	8015B NM	35819
890-3105-7	FS07	Total/NA	Solid	8015B NM	35819
MB 880-35819/1-A	Method Blank	Total/NA	Solid	8015B NM	35819
LCS 880-35819/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	35819

QC Association Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

GC Semi VOA (Continued)

Analysis Batch: 35738 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-35819/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	35819
890-3104-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	35819
890-3104-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	35819

Prep Batch: 35819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Total/NA	Solid	8015NM Prep	
890-3105-2	FS02	Total/NA	Solid	8015NM Prep	
890-3105-3	FS03	Total/NA	Solid	8015NM Prep	
890-3105-4	FS04	Total/NA	Solid	8015NM Prep	
890-3105-5	FS05	Total/NA	Solid	8015NM Prep	
890-3105-6	FS06	Total/NA	Solid	8015NM Prep	
890-3105-7	FS07	Total/NA	Solid	8015NM Prep	
MB 880-35819/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-35819/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-35819/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3104-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3104-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 35981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Total/NA	Solid	8015 NM	
890-3105-2	FS02	Total/NA	Solid	8015 NM	
890-3105-3	FS03	Total/NA	Solid	8015 NM	
890-3105-4	FS04	Total/NA	Solid	8015 NM	
890-3105-5	FS05	Total/NA	Solid	8015 NM	
890-3105-6	FS06	Total/NA	Solid	8015 NM	
890-3105-7	FS07	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 35811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Soluble	Solid	DI Leach	
890-3105-2	FS02	Soluble	Solid	DI Leach	
MB 880-35811/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-35811/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-35811/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-19836-A-5-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-19836-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 36004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-3	FS03	Soluble	Solid	DI Leach	
890-3105-4	FS04	Soluble	Solid	DI Leach	
890-3105-5	FS05	Soluble	Solid	DI Leach	
890-3105-6	FS06	Soluble	Solid	DI Leach	
890-3105-7	FS07	Soluble	Solid	DI Leach	
MB 880-36004/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36004/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36004/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

HPLC/IC (Continued)

Leach Batch: 36004 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3104-A-1-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3104-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 36008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-1	FS01	Soluble	Solid	300.0	35811
890-3105-2	FS02	Soluble	Solid	300.0	35811
MB 880-35811/1-A	Method Blank	Soluble	Solid	300.0	35811
LCS 880-35811/2-A	Lab Control Sample	Soluble	Solid	300.0	35811
LCSD 880-35811/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	35811
880-19836-A-5-B MS	Matrix Spike	Soluble	Solid	300.0	35811
880-19836-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	35811

Analysis Batch: 36198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3105-3	FS03	Soluble	Solid	300.0	36004
890-3105-4	FS04	Soluble	Solid	300.0	36004
890-3105-5	FS05	Soluble	Solid	300.0	36004
890-3105-6	FS06	Soluble	Solid	300.0	36004
890-3105-7	FS07	Soluble	Solid	300.0	36004
MB 880-36004/1-A	Method Blank	Soluble	Solid	300.0	36004
LCS 880-36004/2-A	Lab Control Sample	Soluble	Solid	300.0	36004
LCSD 880-36004/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36004
890-3104-A-1-E MS	Matrix Spike	Soluble	Solid	300.0	36004
890-3104-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36004

Lab Chronicle

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS01
Date Collected: 09/28/22 16:15
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 11:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 22:03	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	35811	09/30/22 12:35	SMC	EET MID
Soluble	Analysis	300.0		1			36008	10/04/22 05:15	CH	EET MID

Client Sample ID: FS02
Date Collected: 09/28/22 15:45
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 12:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 22:24	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	35811	09/30/22 12:35	SMC	EET MID
Soluble	Analysis	300.0		1			36008	10/04/22 05:20	CH	EET MID

Client Sample ID: FS03
Date Collected: 09/28/22 16:20
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-3
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	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 12:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 22:45	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 01:43	CH	EET MID

Client Sample ID: FS04
Date Collected: 09/28/22 15:55
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 12:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS04

Date Collected: 09/28/22 15:55
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-4
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			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 23:06	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 01:49	CH	EET MID

Client Sample ID: FS05

Date Collected: 09/28/22 16:25
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 13:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 23:28	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 01:55	CH	EET MID

Client Sample ID: FS06

Date Collected: 09/28/22 16:05
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-6
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	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 13:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	09/30/22 23:49	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 02:12	CH	EET MID

Client Sample ID: FS07

Date Collected: 09/28/22 16:10
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-7
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	36450	10/08/22 13:26	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36624	10/11/22 13:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36675	10/11/22 12:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			35981	10/03/22 11:45	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	35819	09/30/22 14:01	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	35738	10/01/22 00:11	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Client Sample ID: FS07
Date Collected: 09/28/22 16:10
Date Received: 09/29/22 08:36

Lab Sample ID: 890-3105-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	36004	10/03/22 14:30	KS	EET MID
Soluble	Analysis	300.0		1			36198	10/06/22 02:18	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: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU PC 17

Job ID: 890-3105-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3105-1	FS01	Solid	09/28/22 16:15	09/29/22 08:36	1
890-3105-2	FS02	Solid	09/28/22 15:45	09/29/22 08:36	1
890-3105-3	FS03	Solid	09/28/22 16:20	09/29/22 08:36	1
890-3105-4	FS04	Solid	09/28/22 15:55	09/29/22 08:36	1
890-3105-5	FS05	Solid	09/28/22 16:25	09/29/22 08:36	1
890-3105-6	FS06	Solid	09/28/22 16:05	09/29/22 08:36	1
890-3105-7	FS07	Solid	09/28/22 16:10	09/29/22 08:36	1

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy
Address:	3122 Nat'l Parks Hwy	Address:	3104 E Greene St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	989-854-0852 Email:		bbelill@ensolum.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:	PLU PC 17	Turn Around	
Project Number:	03E1558116	☑ Routine ☐ Rush	
Project Location:	32.1242, -103.8965	Due Date:	
Sampler's Name:	Meredith Roberts	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 007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.6
Total Containers:		Corrected Temperature:	1.4

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2SO_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: NaSO$_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	TPH	BTEX	Chlorides	Sample Comments
FS01	S	9/28/22	1615	1'	C	1	X	X	X	Incident #: nAPP2223832773
FS02			1545							
FS03			1620							Cost Center: 1081061001
FS04			1555							
FS05			1625							
FS06			1605							
FS07			1610							

MR

890-3105 Chain of Custody

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			9/29/2022 0910	2		9.29.22 836
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3105-1
SDG Number: 03E1558116

Login Number: 3105
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3105-1
SDG Number: 03E1558116

Login Number: 3105
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/30/22 10:28 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3295-1
Laboratory Sample Delivery Group: 03e1558116
Client Project/Site: PLU Pierce Canyon 17

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/28/2022 4:28:09 PM

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

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

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

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Laboratory Job ID: 890-3295-1
SDG: 03e1558116

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Job ID: 890-3295-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3295-1

Receipt
The sample was received on 10/26/2022 2:58 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C

GC VOA
Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-38022 and analytical batch 880-38059 recovered outside control limits for the following analytes: Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene.

Method 8021B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 880-38022 and analytical batch 880-38059 recovered outside control limits for the following analytes: Benzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38060 and analytical batch 880-38052 were outside control limits. Sample matrix interference and/or non-homogeneity are 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.

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: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Client Sample ID: FS02A

Date Collected: 10/26/22 12:25
Date Received: 10/26/22 14:58
Sample Depth: 2

Lab Sample ID: 890-3295-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *+ *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 13:40	1
Toluene	<0.00199	U *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 13:40	1
Ethylbenzene	<0.00199	U *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 13:40	1
m-Xylene & p-Xylene	<0.00398	U *1	0.00398		mg/Kg		10/28/22 09:00	10/28/22 13:40	1
o-Xylene	<0.00199	U *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 13:40	1
Xylenes, Total	<0.00398	U *1	0.00398		mg/Kg		10/28/22 09:00	10/28/22 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*10/28/22 09:00*	*10/28/22 13:40*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*10/28/22 09:00*	*10/28/22 13:40*	*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			10/28/22 17:21	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			10/28/22 17:10	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		10/28/22 08:54	10/28/22 13:11	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/28/22 08:54	10/28/22 13:11	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/28/22 08:54	10/28/22 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*10/28/22 08:54*	*10/28/22 13:11*	*1*
o-Terphenyl	*100*		*70 - 130*	*10/28/22 08:54*	*10/28/22 13:11*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**113**		4.99		mg/Kg			10/28/22 14:53	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

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)
880-20848-A-21-A MS	Matrix Spike	88	80
880-20848-A-21-B MSD	Matrix Spike Duplicate	84	75
890-3295-1	FS02A	84	89
LCS 880-38022/1-A	Lab Control Sample	127	127
LCSD 880-38022/2-A	Lab Control Sample Dup	86	83
MB 880-38022/5-A	Method Blank	72	81

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)
880-20851-A-3-C MS	Matrix Spike	86	72
880-20851-A-3-D MSD	Matrix Spike Duplicate	100	79
890-3295-1	FS02A	104	100
LCS 880-38060/2-A	Lab Control Sample	124	105
LCSD 880-38060/3-A	Lab Control Sample Dup	122	106
MB 880-38060/1-A	Method Blank	133 S1+	136 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38022/5-A
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38022

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/27/22 13:44	10/28/22 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:44*	*10/28/22 10:55*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*10/27/22 13:44*	*10/28/22 10:55*	*1*

Lab Sample ID: LCS 880-38022/1-A
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38022

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1306	*+	mg/Kg		131	70 - 130		
Toluene			0.100	0.1257		mg/Kg		126	70 - 130		
Ethylbenzene			0.100	0.1232		mg/Kg		123	70 - 130		
m-Xylene & p-Xylene			0.200	0.2415		mg/Kg		121	70 - 130		
o-Xylene			0.100	0.1175		mg/Kg		117	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*
1,4-Difluorobenzene (Surr)	*127*		*70 - 130*

Lab Sample ID: LCSD 880-38022/2-A
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38022

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08475	*1	mg/Kg		85	70 - 130	43	35
Toluene			0.100	0.08733	*1	mg/Kg		87	70 - 130	36	35
Ethylbenzene			0.100	0.08583	*1	mg/Kg		86	70 - 130	36	35
m-Xylene & p-Xylene			0.200	0.1612	*1	mg/Kg		81	70 - 130	40	35
o-Xylene			0.100	0.07790	*1	mg/Kg		78	70 - 130	41	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*
1,4-Difluorobenzene (Surr)	*83*		*70 - 130*

Lab Sample ID: 880-20848-A-21-A MS
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U *+ *1 F1 F2	0.0996	0.08214		mg/Kg		82	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

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

Lab Sample ID: 880-20848-A-21-A MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38059 — **Prep Batch: 38022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	<0.00200	U *1	0.0996	0.08676		mg/Kg		87	70 - 130
Ethylbenzene	<0.00200	U *1	0.0996	0.08195		mg/Kg		82	70 - 130
m-Xylene & p-Xylene	<0.00401	U *1	0.199	0.1543		mg/Kg		77	70 - 130
o-Xylene	<0.00200	U *1 F1	0.0996	0.07423		mg/Kg		74	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*

Lab Sample ID: 880-20848-A-21-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38059 — **Prep Batch: 38022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U *+ *1 F1 F2	0.0994	0.05518	F1 F2	mg/Kg		56	70 - 130	39	35
Toluene	<0.00200	U *1	0.0994	0.07694		mg/Kg		77	70 - 130	12	35
Ethylbenzene	<0.00200	U *1	0.0994	0.08138		mg/Kg		82	70 - 130	1	35
m-Xylene & p-Xylene	<0.00401	U *1	0.199	0.1388		mg/Kg		70	70 - 130	11	35
o-Xylene	<0.00200	U *1 F1	0.0994	0.06437	F1	mg/Kg		64	70 - 130	14	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*

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

Lab Sample ID: MB 880-38060/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38052 — **Prep Batch: 38060**

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		10/28/22 08:54	10/28/22 09:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/28/22 08:54	10/28/22 09:37	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/28/22 08:54	10/28/22 09:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*133*	*S1+*	*70 - 130*	*10/28/22 08:54*	*10/28/22 09:37*	*1*
o-Terphenyl	*136*	*S1+*	*70 - 130*	*10/28/22 08:54*	*10/28/22 09:37*	*1*

Lab Sample ID: LCS 880-38060/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38052 — **Prep Batch: 38060**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	753.6		mg/Kg		75	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

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

Lab Sample ID: LCS 880-38060/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38052 — **Prep Batch: 38060**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics (Over C10-C28)			1000	949.3		mg/Kg		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*124*		*70 - 130*
o-Terphenyl	*105*		*70 - 130*

Lab Sample ID: LCSD 880-38060/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38052 — **Prep Batch: 38060**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	729.2		mg/Kg		73	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	960.5		mg/Kg		96	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*122*		*70 - 130*
o-Terphenyl	*106*		*70 - 130*

Lab Sample ID: 880-20851-A-3-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38052 — **Prep Batch: 38060**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	1110	F1	998	696.2	F1	mg/Kg		-42	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U	998	815.2		mg/Kg		82	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*86*		*70 - 130*
o-Terphenyl	*72*		*70 - 130*

Lab Sample ID: 880-20851-A-3-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38052 — **Prep Batch: 38060**

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	1110	F1	998	731.3	F1	mg/Kg		-38	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	905.6		mg/Kg		91	70 - 130	11	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*100*		*70 - 130*
o-Terphenyl	*79*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38086/1-A
Matrix: Solid
Analysis Batch: 38100

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			10/28/22 13:27	1

Lab Sample ID: LCS 880-38086/2-A
Matrix: Solid
Analysis Batch: 38100

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	257.4		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-38086/3-A
Matrix: Solid
Analysis Batch: 38100

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	258.0		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-3298-A-1-C MS
Matrix: Solid
Analysis Batch: 38100

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	220		249	458.4		mg/Kg		96	90 - 110		

Lab Sample ID: 890-3298-A-1-D MSD
Matrix: Solid
Analysis Batch: 38100

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	220		249	459.9		mg/Kg		97	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

GC VOA

Prep Batch: 38022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Total/NA	Solid	5035	
MB 880-38022/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38022/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38022/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20848-A-21-A MS	Matrix Spike	Total/NA	Solid	5035	
880-20848-A-21-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 38059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Total/NA	Solid	8021B	38022
MB 880-38022/5-A	Method Blank	Total/NA	Solid	8021B	38022
LCS 880-38022/1-A	Lab Control Sample	Total/NA	Solid	8021B	38022
LCSD 880-38022/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38022
880-20848-A-21-A MS	Matrix Spike	Total/NA	Solid	8021B	38022
880-20848-A-21-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38022

Analysis Batch: 38131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Total/NA	Solid	8015B NM	38060
MB 880-38060/1-A	Method Blank	Total/NA	Solid	8015B NM	38060
LCS 880-38060/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38060
LCSD 880-38060/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38060
880-20851-A-3-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38060
880-20851-A-3-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38060

Prep Batch: 38060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Total/NA	Solid	8015NM Prep	
MB 880-38060/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38060/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38060/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-20851-A-3-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-20851-A-3-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 38086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Soluble	Solid	DI Leach	
MB 880-38086/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38086/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38086/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

HPLC/IC (Continued)

Leach Batch: 38086 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3298-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3298-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 38100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3295-1	FS02A	Soluble	Solid	300.0	38086
MB 880-38086/1-A	Method Blank	Soluble	Solid	300.0	38086
LCS 880-38086/2-A	Lab Control Sample	Soluble	Solid	300.0	38086
LCSD 880-38086/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38086
890-3298-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	38086
890-3298-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38086

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Client Sample ID: FS02A

Date Collected: 10/26/22 12:25
Date Received: 10/26/22 14:58

Lab Sample ID: 890-3295-1

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			5.02 g	5 mL	38022	10/28/22 09:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38059	10/28/22 13:40	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			38131	10/28/22 17:21	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38124	10/28/22 17:10	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	38060	10/28/22 08:54	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38052	10/28/22 13:11	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38086	10/28/22 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38100	10/28/22 14:53	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3295-1
SDG: 03e1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3295-1	FS02A	Solid	10/26/22 12:25	10/26/22 14:58	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: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett 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:	Garrett.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:	PLU Pierce Canyon 17	Turn Around	
Project Number:	03E1558116	☐ Routine ☑ Rush	
Project Location:		Due Date:	2 day
Sampler's Name:	Connor Whitman	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:	IR#007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	5.8
Total Containers:		Corrected Temperature:	5.6

Preservative Codes

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

ANALYSIS REQUEST

890-3295 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
FS02A	S	10/25/22	12:25	2'	C	1		✓	✓	✓

Sample Comments

Incident ID:
nAPP2223832773
Cost Center:
1081061001
AFE:

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10.26.22 1458	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3295-1
SDG Number: 03e1558116

Login Number: 3295
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: 890-3295-1
SDG Number: 03e1558116

Login Number: 3295
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/28/22 10:29 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3296-1
Laboratory Sample Delivery Group: 03E1558116
Client Project/Site: PLU Pierce Canyon 17

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/31/2022 1:13:03 PM

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

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

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

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Laboratory Job ID: 890-3296-1
SDG: 03E1558116

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Definitions/Glossary

Client: Ensolum Job ID: 890-3296-1
Project/Site: PLU Pierce Canyon 17 SDG: 03E1558116

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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)

Definitions/Glossary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Glossary (Continued)

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

Case Narrative

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Job ID: 890-3296-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3296-1

Receipt
The samples were received on 10/26/2022 2:58 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 5.6°C

GC VOA
Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-38022 and analytical batch 880-38059 recovered outside control limits for the following analytes: Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene.

Method 8021B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 880-38022 and analytical batch 880-38059 recovered outside control limits for the following analytes: Benzene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38061 and analytical batch 880-38058 was outside the upper control limits.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-38061 and analytical batch 880-38058 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38114 and analytical batch 880-38169 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-38114 and analytical batch 880-38169 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Client Sample ID: FS04A

Lab Sample ID: 890-3296-1
Matrix: Solid
Date Collected: 10/26/22 10:00
Date Received: 10/26/22 14:58
Sample Depth: 2

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *+ *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 14:01	1
Toluene	<0.00199	U *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 14:01	1
Ethylbenzene	<0.00199	U *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 14:01	1
m-Xylene & p-Xylene	<0.00398	U *1	0.00398		mg/Kg		10/28/22 09:00	10/28/22 14:01	1
o-Xylene	<0.00199	U *1	0.00199		mg/Kg		10/28/22 09:00	10/28/22 14:01	1
Xylenes, Total	<0.00398	U *1	0.00398		mg/Kg		10/28/22 09:00	10/28/22 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*10/28/22 09:00*	*10/28/22 14:01*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*10/28/22 09:00*	*10/28/22 14:01*	*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			10/28/22 17:21	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			10/31/22 12:28	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		10/28/22 15:48	10/30/22 23:30	1
Diesel Range Organics (Over C10-C28)	<49.8	U *-	49.8		mg/Kg		10/28/22 15:48	10/30/22 23:30	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		10/28/22 15:48	10/30/22 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane				*10/28/22 15:48*	*10/30/22 23:30*	*1*
o-Terphenyl				*10/28/22 15:48*	*10/30/22 23:30*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**88.4**		4.96		mg/Kg			10/28/22 15:00	1

Client Sample ID: FS05A

Lab Sample ID: 890-3296-2
Matrix: Solid
Date Collected: 10/26/22 10:50
Date Received: 10/26/22 14:58
Sample Depth: 2

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *+ *1	0.00200		mg/Kg		10/28/22 09:00	10/28/22 15:43	1
Toluene	<0.00200	U *1	0.00200		mg/Kg		10/28/22 09:00	10/28/22 15:43	1
Ethylbenzene	<0.00200	U *1	0.00200		mg/Kg		10/28/22 09:00	10/28/22 15:43	1
m-Xylene & p-Xylene	<0.00399	U *1	0.00399		mg/Kg		10/28/22 09:00	10/28/22 15:43	1
o-Xylene	<0.00200	U *1	0.00200		mg/Kg		10/28/22 09:00	10/28/22 15:43	1
Xylenes, Total	<0.00399	U *1	0.00399		mg/Kg		10/28/22 09:00	10/28/22 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*10/28/22 09:00*	*10/28/22 15:43*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Client Sample ID: FS05A

Date Collected: 10/26/22 10:50
Date Received: 10/26/22 14:58
Sample Depth: 2

Lab Sample ID: 890-3296-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*10/28/22 09:00*	*10/28/22 15:43*	*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			10/31/22 10:08	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			10/31/22 12:28	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		10/28/22 15:48	10/30/22 23:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U *-	49.9	mg/Kg		10/28/22 15:48	10/30/22 23:50	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/28/22 15:48	10/30/22 23:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane				*10/28/22 15:48*	*10/30/22 23:50*	*1*
o-Terphenyl				*10/28/22 15:48*	*10/30/22 23:50*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38.3**		4.96	mg/Kg			10/28/22 15:07	1

Client Sample ID: FS07A

Date Collected: 10/26/22 10:55
Date Received: 10/26/22 14:58
Sample Depth: 2

Lab Sample ID: 890-3296-3

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		10/28/22 09:04	10/28/22 14:12	1
Toluene	<0.00201	U *-	0.00201	mg/Kg		10/28/22 09:04	10/28/22 14:12	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/28/22 09:04	10/28/22 14:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/28/22 09:04	10/28/22 14:12	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/28/22 09:04	10/28/22 14:12	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/28/22 09:04	10/28/22 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*10/28/22 09:04*	*10/28/22 14:12*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*10/28/22 09:04*	*10/28/22 14:12*	*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			10/30/22 22:15	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			10/31/22 12:28	1

Client Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Client Sample ID: FS07A

Lab Sample ID: 890-3296-3
Matrix: Solid
Date Collected: 10/26/22 10:55
Date Received: 10/26/22 14:58
Sample Depth: 2

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		10/28/22 15:48	10/31/22 00:10	1
Diesel Range Organics (Over C10-C28)	<49.9	U *-	49.9		mg/Kg		10/28/22 15:48	10/31/22 00:10	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/28/22 15:48	10/31/22 00:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane				*10/28/22 15:48*	*10/31/22 00:10*	*1*
o-Terphenyl				*10/28/22 15:48*	*10/31/22 00:10*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**69.2**		5.01		mg/Kg			10/28/22 15:13	1

Client Sample ID: SW01

Lab Sample ID: 890-3296-4
Matrix: Solid
Date Collected: 10/26/22 11:00
Date Received: 10/26/22 14:58
Sample Depth: 0 - 2

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		10/28/22 09:04	10/28/22 14:38	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		10/28/22 09:04	10/28/22 14:38	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/28/22 09:04	10/28/22 14:38	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/28/22 09:04	10/28/22 14:38	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/28/22 09:04	10/28/22 14:38	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/28/22 09:04	10/28/22 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/28/22 09:04*	*10/28/22 14:38*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/28/22 09:04*	*10/28/22 14:38*	*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			10/30/22 22:15	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			10/31/22 12:28	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		10/28/22 15:48	10/31/22 00:30	1
Diesel Range Organics (Over C10-C28)	<49.9	U *-	49.9		mg/Kg		10/28/22 15:48	10/31/22 00:30	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/28/22 15:48	10/31/22 00:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane				*10/28/22 15:48*	*10/31/22 00:30*	*1*
o-Terphenyl				*10/28/22 15:48*	*10/31/22 00:30*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Client Sample ID: SW01

Lab Sample ID: 890-3296-4
Matrix: Solid
Date Collected: 10/26/22 11:00
Date Received: 10/26/22 14:58
Sample Depth: 0 - 2

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	211		5.00		mg/Kg			10/28/22 15:20	1

Client Sample ID: SW02

Lab Sample ID: 890-3296-5
Matrix: Solid
Date Collected: 10/26/22 12:20
Date Received: 10/26/22 14:58
Sample Depth: 0 - 2

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		10/28/22 09:04	10/28/22 15:04	1
Toluene	<0.00199	U *-	0.00199		mg/Kg		10/28/22 09:04	10/28/22 15:04	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/28/22 09:04	10/28/22 15:04	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/28/22 09:04	10/28/22 15:04	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/28/22 09:04	10/28/22 15:04	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/28/22 09:04	10/28/22 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*10/28/22 09:04*	*10/28/22 15:04*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*10/28/22 09:04*	*10/28/22 15:04*	*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			10/30/22 22:15	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			10/31/22 12:28	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *-	50.0		mg/Kg		10/28/22 15:48	10/31/22 00:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U *-	50.0		mg/Kg		10/28/22 15:48	10/31/22 00:50	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/28/22 15:48	10/31/22 00:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane				*10/28/22 15:48*	*10/31/22 00:50*	*1*
o-Terphenyl				*10/28/22 15:48*	*10/31/22 00:50*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	90.1		4.99		mg/Kg			10/28/22 15:40	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

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)								
880-20623-A-84-G MS	Matrix Spike	99	93								
880-20623-A-84-K MSD	Matrix Spike Duplicate	96	92								
880-20848-A-21-A MS	Matrix Spike	88	80								
880-20848-A-21-B MSD	Matrix Spike Duplicate	84	75								
890-3296-1	FS04A	88	91								
890-3296-2	FS05A	88	100								
890-3296-3	FS07A	115	99								
890-3296-4	SW01	102	92								
890-3296-5	SW02	100	90								
LCS 880-38022/1-A	Lab Control Sample	127	127								
LCS 880-38061/1-A	Lab Control Sample	110	106								
LCSD 880-38022/2-A	Lab Control Sample Dup	86	83								
LCSD 880-38061/2-A	Lab Control Sample Dup	108	100								
MB 880-38022/5-A	Method Blank	72	81								
MB 880-38061/6-A	Method Blank	62 S1-	89								

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										
890-3296-1	FS04A										
890-3296-2	FS05A										
890-3296-3	FS07A										
890-3296-4	SW01										
890-3296-5	SW02										
MB 880-38114/1-A	Method Blank										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38022/5-A
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38022

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/27/22 13:44	10/28/22 10:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/27/22 13:44	10/28/22 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:44*	*10/28/22 10:55*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*10/27/22 13:44*	*10/28/22 10:55*	*1*

Lab Sample ID: LCS 880-38022/1-A
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38022

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1306	*+	mg/Kg		131	70 - 130		
Toluene			0.100	0.1257		mg/Kg		126	70 - 130		
Ethylbenzene			0.100	0.1232		mg/Kg		123	70 - 130		
m-Xylene & p-Xylene			0.200	0.2415		mg/Kg		121	70 - 130		
o-Xylene			0.100	0.1175		mg/Kg		117	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*
1,4-Difluorobenzene (Surr)	*127*		*70 - 130*

Lab Sample ID: LCSD 880-38022/2-A
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38022

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08475	*1	mg/Kg		85	70 - 130	43	35
Toluene			0.100	0.08733	*1	mg/Kg		87	70 - 130	36	35
Ethylbenzene			0.100	0.08583	*1	mg/Kg		86	70 - 130	36	35
m-Xylene & p-Xylene			0.200	0.1612	*1	mg/Kg		81	70 - 130	40	35
o-Xylene			0.100	0.07790	*1	mg/Kg		78	70 - 130	41	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*
1,4-Difluorobenzene (Surr)	*83*		*70 - 130*

Lab Sample ID: 880-20848-A-21-A MS
Matrix: Solid
Analysis Batch: 38059

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38022

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U *+ *1 F1 F2	0.0996	0.08214		mg/Kg		82	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

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

Lab Sample ID: 880-20848-A-21-A MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38059 — **Prep Batch: 38022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	<0.00200	U *1	0.0996	0.08676		mg/Kg		87	70 - 130
Ethylbenzene	<0.00200	U *1	0.0996	0.08195		mg/Kg		82	70 - 130
m-Xylene & p-Xylene	<0.00401	U *1	0.199	0.1543		mg/Kg		77	70 - 130
o-Xylene	<0.00200	U *1 F1	0.0996	0.07423		mg/Kg		74	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*

Lab Sample ID: 880-20848-A-21-B MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38059 — **Prep Batch: 38022**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U *+ *1 F1 F2	0.0994	0.05518	F1 F2	mg/Kg		56	70 - 130	39	35
Toluene	<0.00200	U *1	0.0994	0.07694		mg/Kg		77	70 - 130	12	35
Ethylbenzene	<0.00200	U *1	0.0994	0.08138		mg/Kg		82	70 - 130	1	35
m-Xylene & p-Xylene	<0.00401	U *1	0.199	0.1388		mg/Kg		70	70 - 130	11	35
o-Xylene	<0.00200	U *1 F1	0.0994	0.06437	F1	mg/Kg		64	70 - 130	14	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*

Lab Sample ID: MB 880-38061/6-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38058 — **Prep Batch: 38061**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/28/22 09:04	10/28/22 11:36	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/28/22 09:04	10/28/22 11:36	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/28/22 09:04	10/28/22 11:36	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/28/22 09:04	10/28/22 11:36	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/28/22 09:04	10/28/22 11:36	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/28/22 09:04	10/28/22 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*62*	*S1-*	*70 - 130*	*10/28/22 09:04*	*10/28/22 11:36*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*10/28/22 09:04*	*10/28/22 11:36*	*1*

Lab Sample ID: LCS 880-38061/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38058 — **Prep Batch: 38061**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07369		mg/Kg		74	70 - 130
Toluene	0.100	0.06319	*-	mg/Kg		63	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

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

Lab Sample ID: LCS 880-38061/1-A
Matrix: Solid
Analysis Batch: 38058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38061

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ethylbenzene			0.100	0.07103		mg/Kg		71	70 - 130		
m-Xylene & p-Xylene			0.200	0.1424		mg/Kg		71	70 - 130		
o-Xylene			0.100	0.07141		mg/Kg		71	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: LCSD 880-38061/2-A
Matrix: Solid
Analysis Batch: 38058

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38061

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08194		mg/Kg		82	70 - 130	11	35
Toluene			0.100	0.07901		mg/Kg		79	70 - 130	22	35
Ethylbenzene			0.100	0.07690		mg/Kg		77	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1545		mg/Kg		77	70 - 130	8	35
o-Xylene			0.100	0.07852		mg/Kg		79	70 - 130	9	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 880-20623-A-84-G MS
Matrix: Solid
Analysis Batch: 38058

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38061

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00199	U	0.0998	0.07938		mg/Kg		80	70 - 130		
Toluene	<0.00199	U *-	0.0998	0.07727		mg/Kg		77	70 - 130		
Ethylbenzene	<0.00199	U	0.0998	0.07442		mg/Kg		75	70 - 130		
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1483		mg/Kg		74	70 - 130		
o-Xylene	<0.00199	U	0.0998	0.07325		mg/Kg		73	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: 880-20623-A-84-K MSD
Matrix: Solid
Analysis Batch: 38058

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38061

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0990	0.08035		mg/Kg		81	70 - 130	1	35
Toluene	<0.00199	U *-	0.0990	0.07748		mg/Kg		78	70 - 130	0	35
Ethylbenzene	<0.00199	U	0.0990	0.07532		mg/Kg		76	70 - 130	1	35
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1500		mg/Kg		76	70 - 130	1	35
o-Xylene	<0.00199	U	0.0990	0.07389		mg/Kg		75	70 - 130	1	35

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

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

Lab Sample ID: MB 880-38114/1-A
Matrix: Solid
Analysis Batch: 38169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38114

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		10/28/22 15:48	10/30/22 21:02	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/28/22 15:48	10/30/22 21:02	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/28/22 15:48	10/30/22 21:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane				10/28/22 15:48	10/30/22 21:02	1
o-Terphenyl				10/28/22 15:48	10/30/22 21:02	1

Lab Sample ID: LCS 880-38114/2-A
Matrix: Solid
Analysis Batch: 38169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38114

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			51000	990.8	*-	mg/Kg		2	70 - 130		
Diesel Range Organics (Over C10-C28)			51000	966.7	*-	mg/Kg		2	70 - 130		

Lab Sample ID: LCSD 880-38114/3-A
Matrix: Solid
Analysis Batch: 38169

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38114

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			51000	819.4	*-	mg/Kg		2	70 - 130	19	20
Diesel Range Organics (Over C10-C28)			51000	888.9	*-	mg/Kg		2	70 - 130	8	20

Lab Sample ID: 890-3298-A-1-G MS
Matrix: Solid
Analysis Batch: 38169

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38114

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *- F1	50900	1020	F1	mg/Kg		2	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U *- F1 F2	50900	674.4	F1	mg/Kg		1	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

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

Lab Sample ID: 890-3298-A-1-H MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38169 — **Prep Batch: 38114**

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	<49.8	U *- F1	50900	1028	F1	mg/Kg		2	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.8	U *- F1 F2	50900	841.7	F1 F2	mg/Kg		2	70 - 130	22	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38086/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 38100

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/28/22 13:27	1

Lab Sample ID: LCS 880-38086/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 38100

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	257.4		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-38086/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 38100

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	258.0		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-3296-4 MS — **Client Sample ID: SW01**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 38100

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	211		250	449.6		mg/Kg		95	90 - 110		

Lab Sample ID: 890-3296-4 MSD — **Client Sample ID: SW01**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 38100

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	211		250	449.8		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

GC VOA

Prep Batch: 38022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Total/NA	Solid	5035	
890-3296-2	FS05A	Total/NA	Solid	5035	
MB 880-38022/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38022/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38022/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20848-A-21-A MS	Matrix Spike	Total/NA	Solid	5035	
880-20848-A-21-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 38058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-3	FS07A	Total/NA	Solid	8021B	38061
890-3296-4	SW01	Total/NA	Solid	8021B	38061
890-3296-5	SW02	Total/NA	Solid	8021B	38061
MB 880-38061/6-A	Method Blank	Total/NA	Solid	8021B	38061
LCS 880-38061/1-A	Lab Control Sample	Total/NA	Solid	8021B	38061
LCSD 880-38061/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38061
880-20623-A-84-G MS	Matrix Spike	Total/NA	Solid	8021B	38061
880-20623-A-84-K MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38061

Analysis Batch: 38059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Total/NA	Solid	8021B	38022
890-3296-2	FS05A	Total/NA	Solid	8021B	38022
MB 880-38022/5-A	Method Blank	Total/NA	Solid	8021B	38022
LCS 880-38022/1-A	Lab Control Sample	Total/NA	Solid	8021B	38022
LCSD 880-38022/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38022
880-20848-A-21-A MS	Matrix Spike	Total/NA	Solid	8021B	38022
880-20848-A-21-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38022

Prep Batch: 38061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-3	FS07A	Total/NA	Solid	5035	
890-3296-4	SW01	Total/NA	Solid	5035	
890-3296-5	SW02	Total/NA	Solid	5035	
MB 880-38061/6-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38061/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38061/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20623-A-84-G MS	Matrix Spike	Total/NA	Solid	5035	
880-20623-A-84-K MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 38132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Total/NA	Solid	Total BTEX	
890-3296-2	FS05A	Total/NA	Solid	Total BTEX	
890-3296-3	FS07A	Total/NA	Solid	Total BTEX	
890-3296-4	SW01	Total/NA	Solid	Total BTEX	
890-3296-5	SW02	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

GC Semi VOA

Prep Batch: 38114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Total/NA	Solid	8015NM Prep	
890-3296-2	FS05A	Total/NA	Solid	8015NM Prep	
890-3296-3	FS07A	Total/NA	Solid	8015NM Prep	
890-3296-4	SW01	Total/NA	Solid	8015NM Prep	
890-3296-5	SW02	Total/NA	Solid	8015NM Prep	
MB 880-38114/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38114/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38114/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3298-A-1-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3298-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Total/NA	Solid	8015B NM	38114
890-3296-2	FS05A	Total/NA	Solid	8015B NM	38114
890-3296-3	FS07A	Total/NA	Solid	8015B NM	38114
890-3296-4	SW01	Total/NA	Solid	8015B NM	38114
890-3296-5	SW02	Total/NA	Solid	8015B NM	38114
MB 880-38114/1-A	Method Blank	Total/NA	Solid	8015B NM	38114
LCS 880-38114/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38114
LCSD 880-38114/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38114
890-3298-A-1-G MS	Matrix Spike	Total/NA	Solid	8015B NM	38114
890-3298-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38114

Analysis Batch: 38267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Total/NA	Solid	8015 NM	
890-3296-2	FS05A	Total/NA	Solid	8015 NM	
890-3296-3	FS07A	Total/NA	Solid	8015 NM	
890-3296-4	SW01	Total/NA	Solid	8015 NM	
890-3296-5	SW02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 38086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Soluble	Solid	DI Leach	
890-3296-2	FS05A	Soluble	Solid	DI Leach	
890-3296-3	FS07A	Soluble	Solid	DI Leach	
890-3296-4	SW01	Soluble	Solid	DI Leach	
890-3296-5	SW02	Soluble	Solid	DI Leach	
MB 880-38086/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38086/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38086/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3296-4 MS	SW01	Soluble	Solid	DI Leach	
890-3296-4 MSD	SW01	Soluble	Solid	DI Leach	

Analysis Batch: 38100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-1	FS04A	Soluble	Solid	300.0	38086
890-3296-2	FS05A	Soluble	Solid	300.0	38086

QC Association Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

HPLC/IC (Continued)

Analysis Batch: 38100 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3296-3	FS07A	Soluble	Solid	300.0	38086
890-3296-4	SW01	Soluble	Solid	300.0	38086
890-3296-5	SW02	Soluble	Solid	300.0	38086
MB 880-38086/1-A	Method Blank	Soluble	Solid	300.0	38086
LCS 880-38086/2-A	Lab Control Sample	Soluble	Solid	300.0	38086
LCSD 880-38086/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38086
890-3296-4 MS	SW01	Soluble	Solid	300.0	38086
890-3296-4 MSD	SW01	Soluble	Solid	300.0	38086

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Client Sample ID: FS04A
Date Collected: 10/26/22 10:00
Date Received: 10/26/22 14:58

Lab Sample ID: 890-3296-1
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			5.03 g	5 mL	38022	10/28/22 09:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38059	10/28/22 14:01	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			38132	10/28/22 17:21	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38267	10/31/22 12:28	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	38114	10/28/22 15:48	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38169	10/30/22 23:30	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	38086	10/28/22 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38100	10/28/22 15:00	SMC	EET MID

Client Sample ID: FS05A
Date Collected: 10/26/22 10:50
Date Received: 10/26/22 14:58

Lab Sample ID: 890-3296-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	38022	10/28/22 09:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38059	10/28/22 15:43	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			38132	10/31/22 10:08	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38267	10/31/22 12:28	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38114	10/28/22 15:48	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38169	10/30/22 23:50	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	38086	10/28/22 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38100	10/28/22 15:07	SMC	EET MID

Client Sample ID: FS07A
Date Collected: 10/26/22 10:55
Date Received: 10/26/22 14:58

Lab Sample ID: 890-3296-3
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			4.97 g	5 mL	38061	10/28/22 09:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38058	10/28/22 14:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38132	10/30/22 22:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38267	10/31/22 12:28	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38114	10/28/22 15:48	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38169	10/31/22 00:10	AJ	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	38086	10/28/22 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38100	10/28/22 15:13	SMC	EET MID

Client Sample ID: SW01
Date Collected: 10/26/22 11:00
Date Received: 10/26/22 14:58

Lab Sample ID: 890-3296-4
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			4.99 g	5 mL	38061	10/28/22 09:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38058	10/28/22 14:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38132	10/30/22 22:15	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Client Sample ID: SW01

Lab Sample ID: 890-3296-4

Date Collected: 10/26/22 11:00
Matrix: Solid
Date Received: 10/26/22 14:58

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			38267	10/31/22 12:28	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	38114	10/28/22 15:48	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38169	10/31/22 00:30	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	38086	10/28/22 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38100	10/28/22 15:20	SMC	EET MID

Client Sample ID: SW02

Lab Sample ID: 890-3296-5

Date Collected: 10/26/22 12:20
Matrix: Solid
Date Received: 10/26/22 14:58

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	38061	10/28/22 09:04	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38058	10/28/22 15:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38132	10/30/22 22:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38267	10/31/22 12:28	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38114	10/28/22 15:48	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38169	10/31/22 00:50	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38086	10/28/22 10:55	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38100	10/28/22 15:40	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

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	MCAWW	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

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU Pierce Canyon 17

Job ID: 890-3296-1
SDG: 03E1558116

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3296-1	FS04A	Solid	10/26/22 10:00	10/26/22 14:58	2
890-3296-2	FS05A	Solid	10/26/22 10:50	10/26/22 14:58	2
890-3296-3	FS07A	Solid	10/26/22 10:55	10/26/22 14:58	2
890-3296-4	SW01	Solid	10/26/22 11:00	10/26/22 14:58	0 - 2
890-3296-5	SW02	Solid	10/26/22 12:20	10/26/22 14:58	0 - 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:	Ben Belill	Bill to: (if different)	Garrett 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:	Garrett.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:	PLU Pierce Canyon 17	Turn Around	☐ Routine ☑ Rush
Project Number:	03E1558116	Due Date:	2 day
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	5.8	
Total Containers:		Corrected Temperature:	5.6	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
FS04A	S	10/26/22	10:00	2'	C	1		✓	✓	✓
FS05A	S		10:50	2'	C	1		✓	✓	✓
FS07A	S		10:55	2'	C	1		✓	✓	✓
SW01	S		11:00	0-2'	C	1		✓	✓	✓
SW02	S	↓	12:20	0-2'	C	1		✓	✓	✓

890-3296 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID:
nAPP2223832773
Cost Center:
1081061001
AFE:

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		10.26.22 1245	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3296-1
SDG Number: 03E1558116

Login Number: 3296
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: 890-3296-1
SDG Number: 03E1558116

Login Number: 3296
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/28/22 10:29 AM

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

ENSOLUM

APPENDIX E

NMOCD Notifications

From: Kalei Jennings
To: Ben Belill; Tacoma Morrissey
Subject: FW: XTO - Sampling Notification (Week of 9/26/22 - 9/30/22)
Date: Friday, September 23, 2022 5:07:05 PM
Attachments: image001.png
image002.png
image003.png
image004.png

FYI

Kalei Jennings
Senior Scientist
817-683-2503
Ensolum, LLC

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, September 23, 2022 3:52 PM
To: ocd.enviro@state.nm.us; mike.bratcher@state.nm.us; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Kalei Jennings <kjennings@ensolum.com>
Subject: XTO - Sampling Notification (Week of 9/26/22 - 9/30/22)

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of September 26, 2022.

Monday
- PLU 184H / nAPP2219648561

Tuesday
- PLU 184H / nAPP2219648561

Wednesday
- PLU PC 17 / NAPP2223832773

Thursday
- BEU 29W Vader 100H / nAPP2102831345
- PLU 411/ nAPP2219646774

Friday

- BEU 29W Vader 100H / nAPP2102831345
- PLU 411/ nAPP2219646774

Thank you!

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: Green, Garrett J
To: ocd.enviro@emnrd.nm.gov; Hamlet, Robert, EMNRD; Bratcher, Michael, EMNRD
Cc: DelawareSpills /SM; Tacoma Morrissey
Subject: XTO - Sampling Notification (Week of 10/24/22 - 10/28/22)
Date: Friday, October 21, 2022 1:10:30 PM

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of Oct 24, 2022.

Monday
- Elk Wallow CDP/ nAPP2223831434

Tuesday
- Elk Wallow CDP/ nAPP2223831434

Wednesday
- PLU PC 17/ nAPP2223832773

Thursday
- JRU DI 11 Ekalaka 823H/ nAPP2224527297
- Poker Lake Unit 409/ nAPP2223751933
- PLU 27 Brushy Draw 167H / nAPP2222741514

Friday
- JRU DI 11 Ekalaka 823H/ nAPP2224527297
- Poker Lake Unit 409/ nAPP2223751933
- PLU 27 Brushy Draw 167H / nAPP2222741514

Thank you!

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

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 157796

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 157796
	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 #NAPP2223832773 PLU PIERCE CANYON 17 TANK BATTERY, thank you. This closure is approved.	2/3/2023