

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	NAPP2205638843
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Adrian Baker	Contact Telephone 432-236-3808
Contact email adrian.baker@exxonmobil.com	Incident # (assigned by OCD)
Contact mailing address 6401 Holiday Hill Rd Bldg 5, Midland, Texas, 79707	

Location of Release Source

Latitude 32.20788 Longitude -103.77071
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake 15 Twin Wells Ranch	Site Type Tank Battery
Date Release Discovered 02/20/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
D	22	24S	31E	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) 21.39	Volume Recovered (bbls) 20.00
☐ 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)

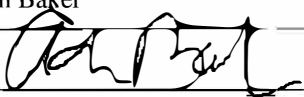
Cause of Release Oil was released from the air eliminator on the oil circulating pump into containment and onto ground. Free fluids were recovered. A third-party contractor has been retained for remediation purposes.

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

Initial Response

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

☒ The source of the release has been stopped.	
☒ The impacted area has been secured to protect human health and the environment.	
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: Adrian Baker	Title: SSHE Coordinator
Signature: 	Date: 2/25/22
email: adrian.baker@exxonmobil.com	Telephone: 432-236-3808
<u>OCD Only</u>	
Received by: Ramona Marcus	Date: 3/1/2022

NAPP2205638843

Location:	PLU 15 TWR West Battery	
Spill Date:	2/20/2022	
Area 1		
Approximate Area =	1562.90	sq. ft.
Average Saturation (or depth) of spill =	2.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	21.39	bbls
Total Produced Water =	0.00	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	21.39	bbls
Total Produced Water =	0.00	bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	20.00	bbls
Total Produced Water =	0.00	bbls

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

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

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

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

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

State of New Mexico
Oil Conservation Division

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

Printed Name: Garrett Green Title: Environmental CoordinatorSignature:  Date: 08/10/2022email: garrett.green@exxonmobil.com Telephone: 575-200-0729**OCD Only**Received by: Jocelyn Harimon Date: 11/22/2022

Incident ID	NAPP2205638843
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Remediation Plan

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

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

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

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

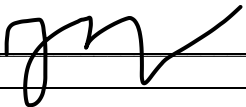
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public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

Printed Name: Garrett Green Title: Environmental Coordinator
Signature:  Date: 08/10/2022
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 11/22/2022

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

Signature:  Date: 11/22/2022



August 10, 2022

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

**Re: Deferral Request
Poker Lake Unit 15 Twin Wells Ranch
Incident Numbers NAPP2205638843 and NAPP2207746719
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this Deferral Request to document site assessment, delineation and soil sampling activities at the Poker Lake Unit 15 Twin Wells Ranch (Site). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following two incidents of crude oil releasing into a lined containment and onto the wellpad. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this Deferral Request, describing site assessment and delineation activities that have occurred and requesting deferral of final remediation for Incident Numbers NAPP2205638843 and NAPP2207746719 until the Site is reconstructed, and/or the well pad is abandoned.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in in Unit D, Section 22, Township 24 South, Range 31 East, in Eddy County, New Mexico (32.20815° N, 103.77066°W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land.

On February 20, 2022, oil was released from the air eliminator on the oil circulating pump, resulting in the release of approximately 21.39 barrels (bbls) of crude oil into the lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; 20.0 bbls of released crude oil were recovered. XTO submitted a Release Notification Form C-141 (Form C-141) on February 25, 2022. The release was assigned Incident Number NAPP2205638843.

On March 4, 2022, the packing on the circulation pump failed, resulting in the release of approximately 8.36 barrels (bbls) of crude oil into the lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; 8.0 bbls of released crude oil were recovered. XTO submitted a Release Notification Form C-141 (Form C-141) on March 18, 2022. The release was assigned Incident Number NAPP2207746719.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. On December 29, 2020, a soil boring (C-4508) was drilled 0.3 miles southeast of the Site utilizing a truck-mounted hollow-stem auger rig. Soil boring C-4508 was drilled to a depth of 111 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 111 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. All wells used to determine depth to groundwater are depicted on Figure 1. The Well Record and Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 14,830 feet northwest 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 1 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 April 18, 2022, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Four preliminary soil samples (SS01 through SS04) were collected within and around the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of the impacted soil. The preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary 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 (COC) procedures to Eurofins

Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of 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 preliminary soil samples SS01 and SS02 indicated that TPH-GRO/TPH-DRO, and TPH concentrations exceeded the Closure Criteria. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the preliminary soil samples, additional remediation activities were warranted.

A 48-hour advance notice of liner inspection was provided via email to the New Mexico Oil Conservation Division (NMOCD) District II office. A liner integrity inspection was conducted by Ensolum personnel on July 14, 2022 to assess containment of the fluids that collected in the liner. The liner was determined to be in good working condition. Photo documentation was conducted during the liner inspection and a photographic log is included in Appendix B.

DELINEATION SOIL SAMPLING ACTIVITIES

Between July 13, 2022 and July 18, 2022, Ensolum personnel were at the Site to oversee delineation activities. Borehole BH01 and potholes PH01 through PH07 were advanced via hand auger and backhoe, respectively, to a depth of 4 feet bgs within and around the release extent, to assess the lateral and vertical extent of the release. Delineation soil samples were collected from each pothole at depths ranging from 0.5 feet to 3 feet bgs. Soil from the delineation borehole and potholes were field screened for volatile aromatic hydrocarbons and chloride using a PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the borehole and potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 3.

Laboratory analytical results for delineation soil sample PH01 at 2 feet bgs and PH02 at 1 foot indicated that TPH-GRO/TPH-DRO and TPH concentrations exceeded the Closure Criteria. Laboratory analytical results for all other delineation soil samples indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations are compliant with the strictest Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix D.

Surface scraping of impacted soil was conducted from the release area as indicated by visible staining and laboratory analytical results from the preliminary soil samples. Surface scraping activities were performed using a backhoe and hand tools. The release occurred on the well pad near production equipment and surface pipelines. XTO safety policy restricts soil disturbing activities to a 2-foot radius of any on-site production equipment. The estimated area of remaining impacted soil and delineation soil sample locations are presented on Figure 4. The estimated area of remaining impacted soil measures approximately 780 square feet and, assuming a 1 to 2 feet depth based on the delineation soil sample results listed above, a total of approximately 43 cubic yards of TPH impacted soil remains in place.

DEFERRAL REQUEST

XTO is requesting deferral of final remediation due to the presence of active production equipment and surface pipelines surrounding the lined containment preventing full excavation of impacted soil. The impacted soil is limited to the area between two lined containments and active production equipment, where remediation would require a major facility deconstruction. The impacted soil remaining in place is delineated vertically by delineation soil samples PH01A and PH02A, both collected at 3 feet bgs. The soil is laterally delineated by delineation soil samples from borehole BH01 and potholes PH03 through PH07.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was determined to be greater than 100 feet bgs, the majority of the release was contained laterally by the lined containment, the liner was determined to be in good working condition, and the impacted soil remaining in place is limited in areal and vertical extent. Any gross impacts were removed via scraping of the surface soils.

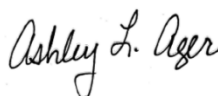
Based on the presence of active production equipment within the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2205638843 and NAPP2207746719 until final reclamation of the well pad or major construction, whichever comes first.

If you have any questions or comments, please contact Ms. Ashley Ager at (970) 946-1093 or aager@ensolum.com.

Sincerely,
Ensolum, LLC



Ben Belill
Project Geologist



Ashley L. Ager, M.S., P.G.
Program Director

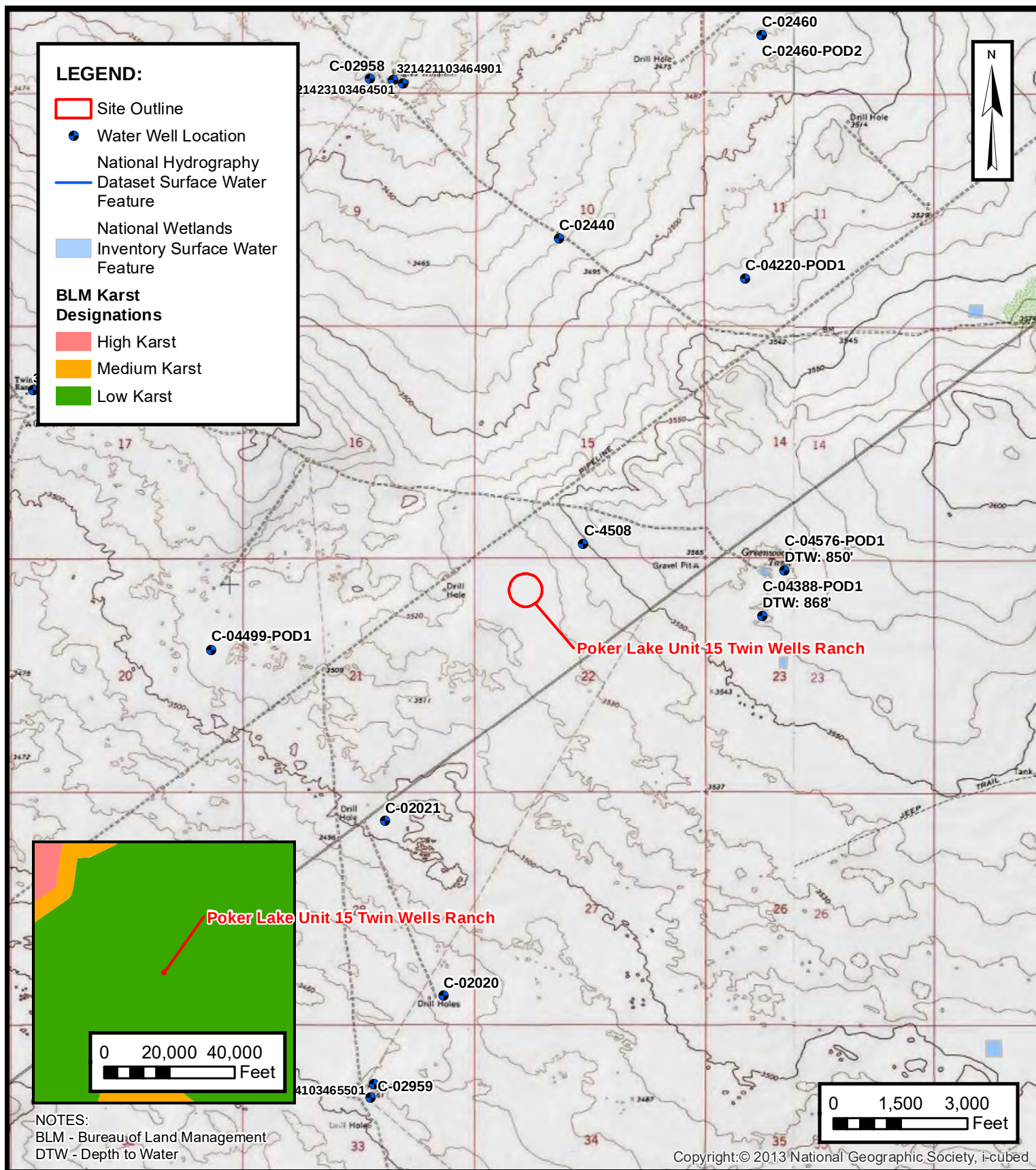
cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

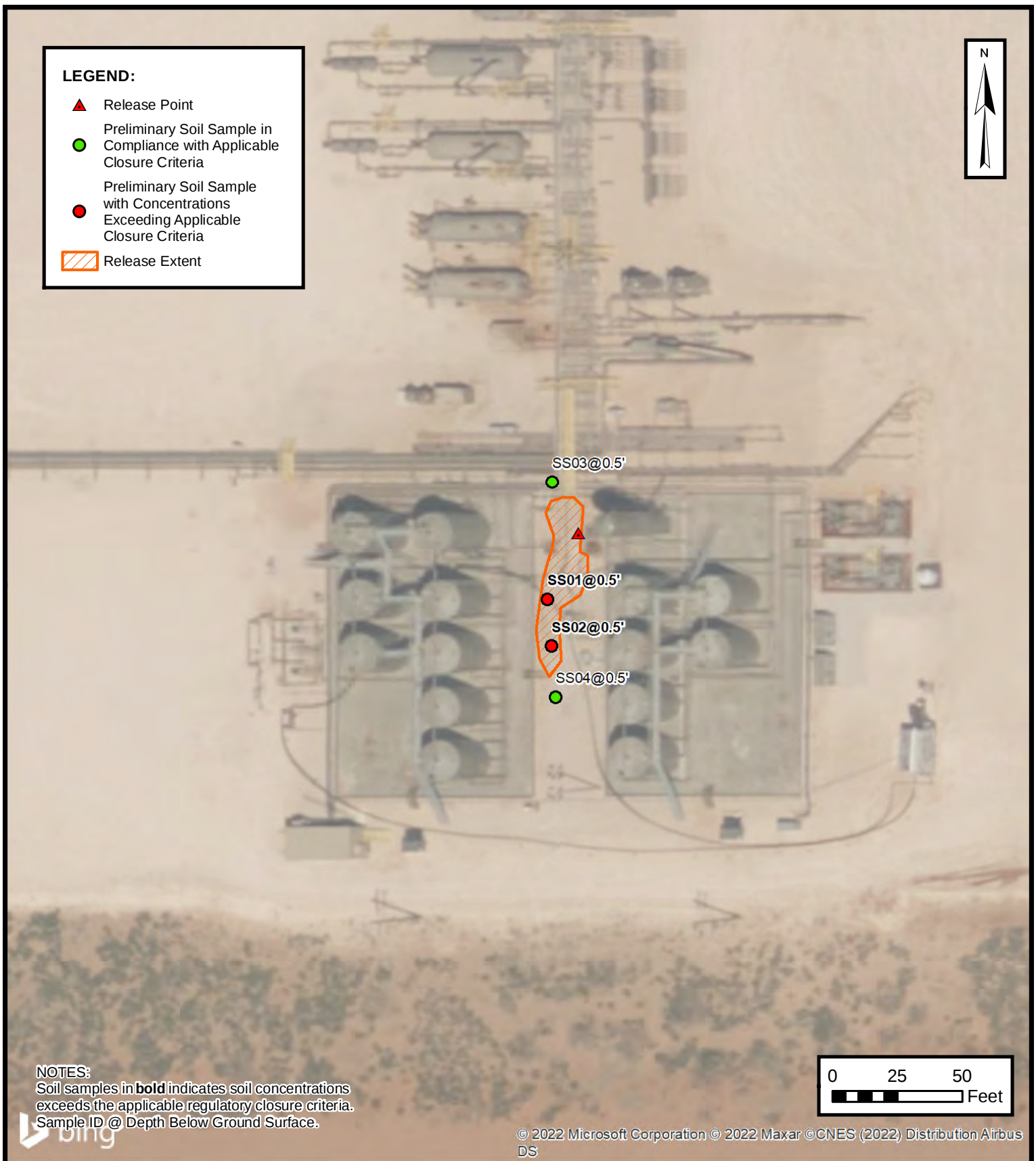
Appendices:

Figure 1	Site Receptor Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Deferral Area Map
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Lithologic / Soil Sampling Logs
Appendix C	Photographic Log
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Sample Notification



FIGURES





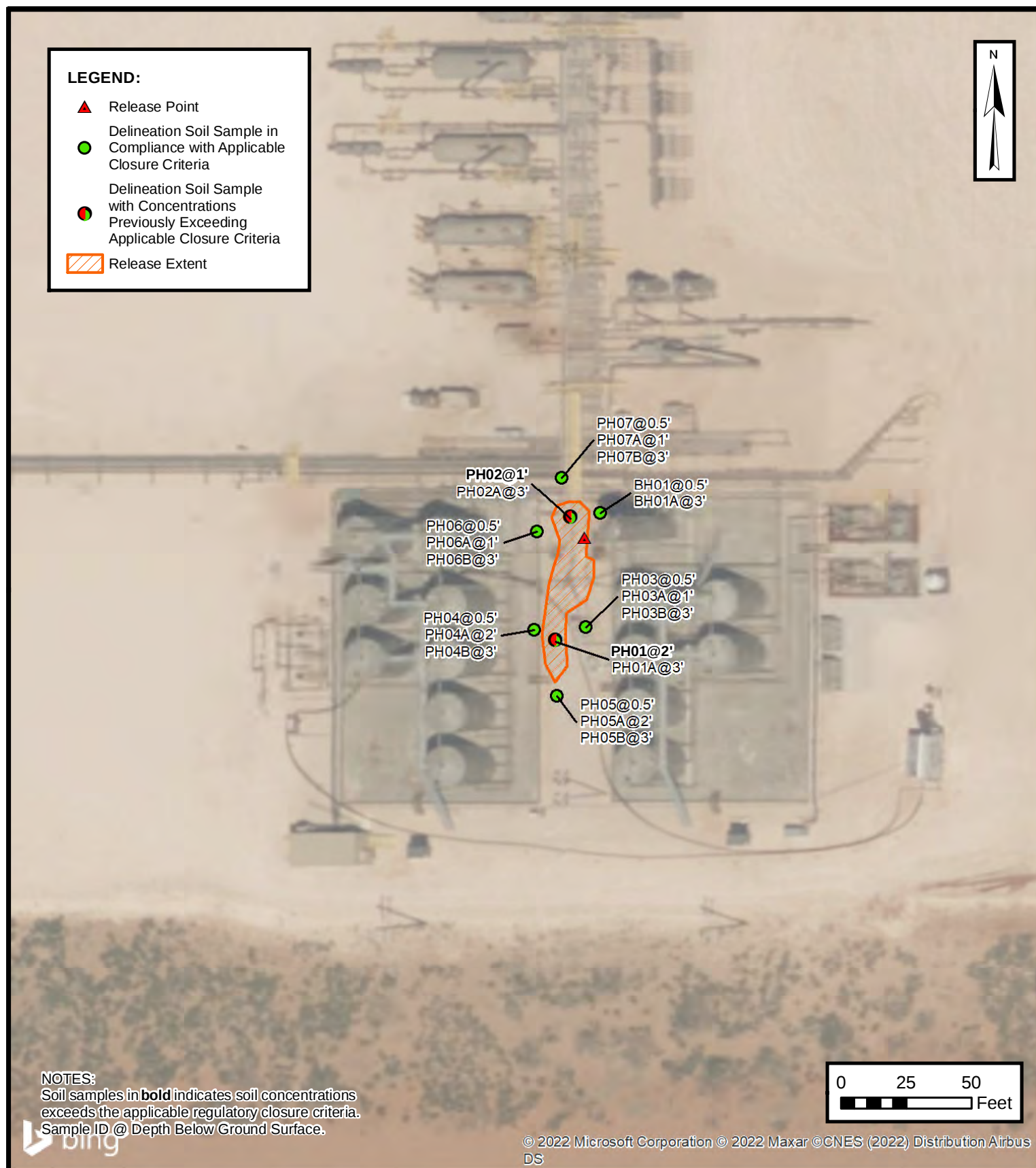
PRELIMINARY SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
POKER LAKE UNIT 15 TWIN WELLS RANCH
NAPP2205638843 and NAPP2207746719
Unit D, Section 22, Township 24S, Range 31E
Eddy County, New Mexico

FIGURE

2

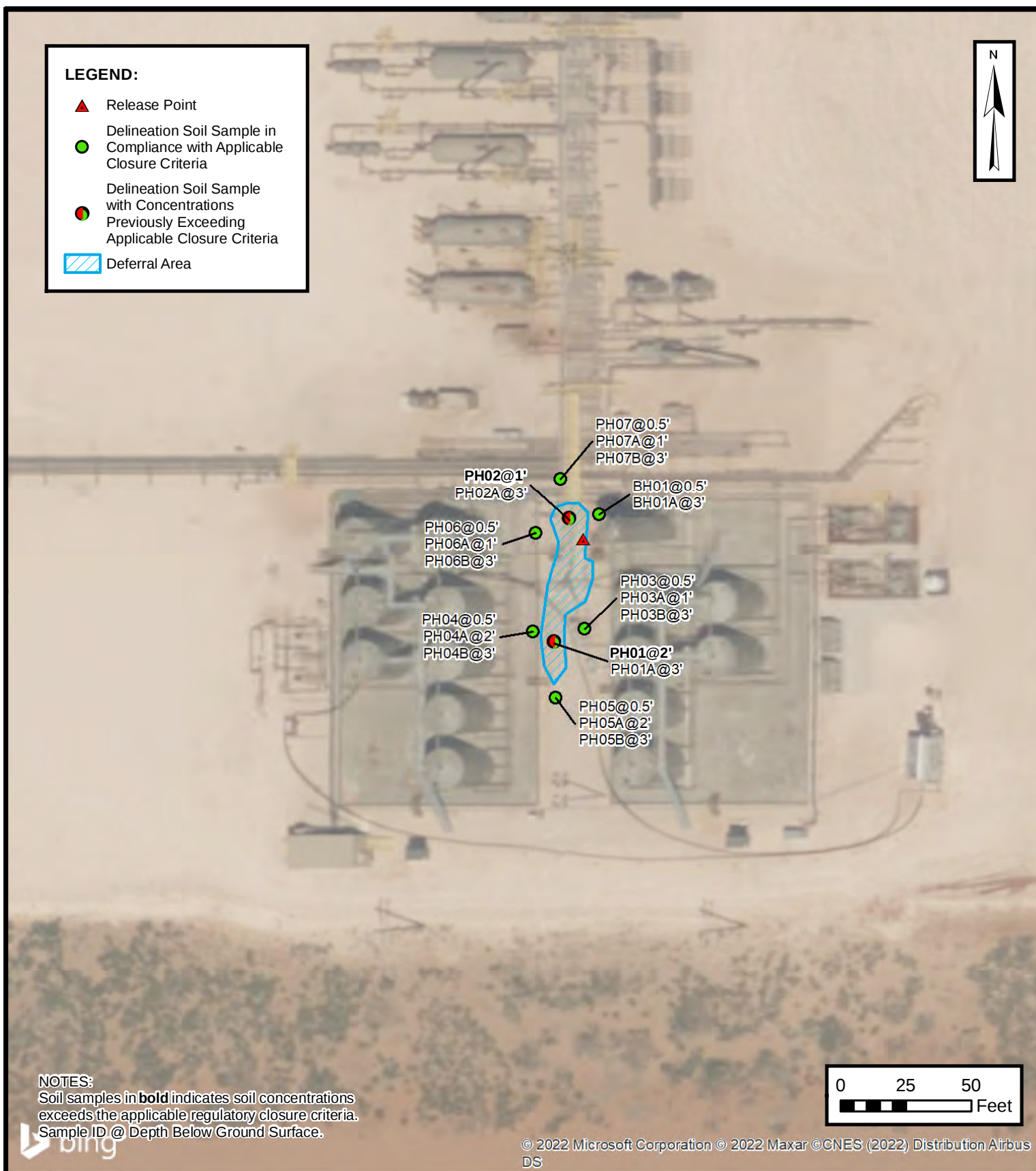
ENSOLUM
Environmental & Hydrogeologic Consultants



DELINEATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
POKER LAKE UNIT 15 TWIN WELLS RANCH
NAPP2205638843 and NAPP2207746719
Unit D, Section 22, Township 24S, Range 31E
Eddy County, New Mexico

FIGURE
3



DEFERRAL MAP

XTO ENERGY, INC
POKER LAKE UNIT 15 TWIN WELLS RANCH
NAPP2205638843 and NAPP2207746719
Unit D, Section 22, Township 24S, Range 31E
Eddy County, New Mexico

FIGURE
4



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
 XTO Energy, Inc.
 Poker Lake Unit 15 Twin Wells Ranch
 Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Preliminary Soil Sample Analytical Results										
SS01	04/18/2022	0.5	<0.101	37.4	1,200	7,380	<50.0	8,580	8,580	578
SS02	04/18/2022	0.5	<0.0237	44.9	1,150	6,550	<49.9	7,700	7,700	56.4
SS03	04/18/2022	0.5	<0.00200	0.105	<50.0	69.8	<50.0	69.8	69.8	183
SS04	04/18/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	126
Delineation Soil Sample Analytical Results										
PH01	07/14/2022	2	<0.0106	20.3	1,770	3,850	721	5,520	6,340	101
PH01A	07/14/2022	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.00	41.9
PH02	07/15/2022	1	<0.00328	26.0	1,110	3,710	707	4,427	5,530	80.5
PH02A	07/15/2022	3	<0.00200	<0.00399	<.50	<50.0	<50.0	<50.0	<50.0	22.8
PH03	07/15/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	6.55
PH03A	07/15/2022	1	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	32.0
PH03B	07/15/2022	3	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	154
PH04	07/15/2022	0.5	<0.00201	>0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	<4.99
PH04A	07/15/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	29.0
PH04B	07/15/2022	3	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	26.9
PH05	07/15/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	5.39
PH05A	07/15/2022	2	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	123
PH05B	07/15/2022	3	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	56.5
PH06	07/15/2022	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	35.8
PH06A	07/15/2022	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	24.9
PH06B	07/15/2022	3	<0.000398	<0.000795	<49.9	<49.9	<49.9	<49.9	<49.9	34.8



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
XTO Energy, Inc.
Poker Lake Unit 15 Twin Wells Ranch
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
PH07	07/15/2022	0.5	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	24.3
PH07A	07/15/2022	1	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	131
PH07B	07/15/2022	3	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	112
BH01	07/18/2022	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	179
BH01A	07/18/2022	3	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	36.5

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria for Soils Impacted by a Release



APPENDIX A

Referenced Well Records



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (BH-01)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4508			
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707	
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32°	MINUTES 12'	SECONDS 46.69" N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84			
LONGITUDE -103° 45' 55.29" W								
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SW SE Sec. 15 T24S R31E								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 12/29/2020		DRILLING ENDED 12/29/2020		DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 110	DEPTH WATER FIRST ENCOUNTERED (FT) n/a	
	COMPLETED WELL IS: ☐ ARTESIAN ☒ DRY HOLE ☐ SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) n/a		
	DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☒ OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	110	±8.5	Boring- HSA	--	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO.	C-4508	POD NO.	1	TRN NO.	1086651
LOCATION	Exp1 24S.31E.15.344	WELL TAG ID NO.		PAGE 1 OF 2	

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)
	FROM	TO				
	0	14	14	SAND, medium-fine grain, poorly graded, some claiche, light-brown-tan, dry	Y ✓ N	
	14	15	1	SAND, fine grain, poorly graded, some claiche, light-brown-tan, dry	Y ✓ N	
	15	25	5	CALICHE, moderately consolidated, silty, some gravel, off-white-tan, dry	Y ✓ N	
	25	46	21	SILTSTONE, mod. consolidated, some sand, red-brown, dry	Y ✓ N	
	46	64	18	CLAYSTONE, mod. consolidated, cohesive, few sand, red-brown, dry	Y ✓ N	
	64	72	8	SANDSTONE, high consolidated, medium-grain, well graded, white/light brown	Y ✓ N	
	72	90	18	CLAYSTONE, high consolidated, cohesive, medium plasticity, few sand, red-brown	Y ✓ N	
	90	101	11	SANDSTONE, high consolidated, fine grain, few silt, white/offwhite	Y ✓ N	
	101	108	7	CLAYSTONE, high consolidated, cohesive, med.-low plasticity, few sand, red-brown	Y ✓ N	
	108	111	3	SANDSTONE, high consolidated, fine grain, few silt, white/offwhite, dry	Y ✓ N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
					Y N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:					TOTAL ESTIMATED WELL YIELD (gpm): 0.00	
☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER - SPECIFY:						

5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.
	MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface. Logs adapted from WSP on-site geologist.	
	PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge	

6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:	
	Jackie D. Atkins SIGNATURE OF DRILLER / PRINT SIGNED NAME	02/11/2021 DATE

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. C-4504	POD NO. 1	TRN NO. 684651
LOCATION	WELL TAG ID NO.	PAGE 2 OF 2

OSE DII FEB 12 2021 PM 3:10



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National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

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Groundwater levels for the Nation



Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

site_no list =

- 321310103482101

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321310103482101 24S.31E.17.13120

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°13'14.1", Longitude 103°48'23.4" NAD83

Land-surface elevation 3,530.00 feet above NGVD29

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

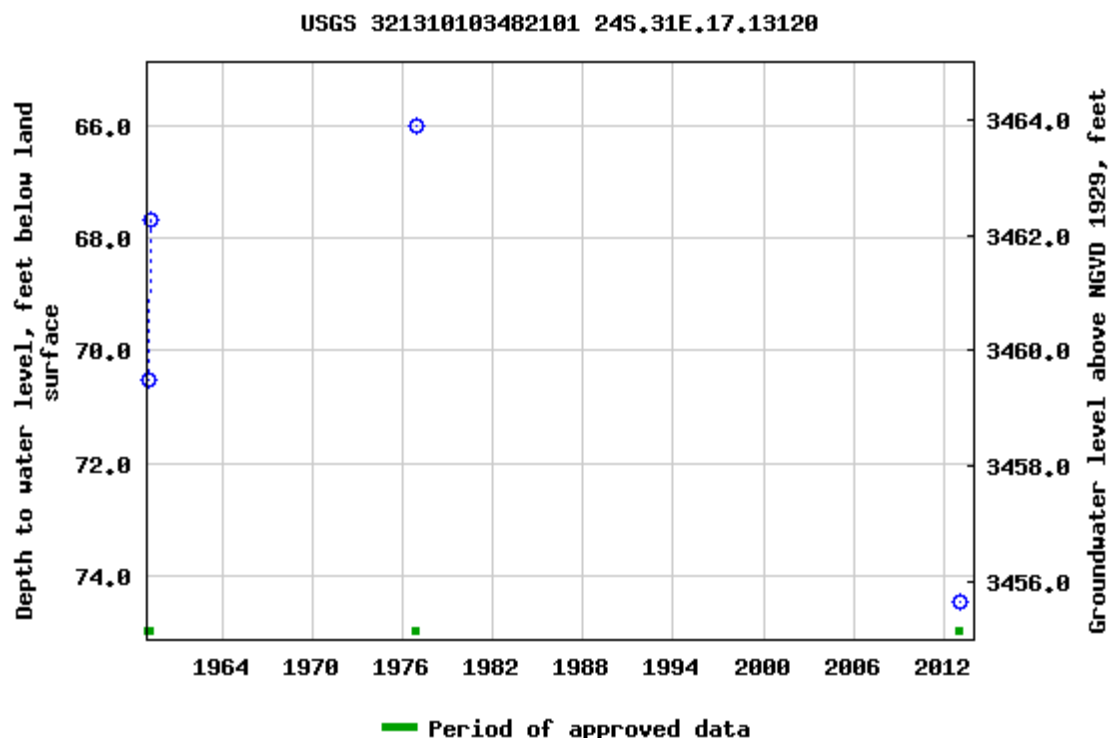
Output formats

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Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-08-08 14:10:11 EDT

0.55 0.47 nadww01



APPENDIX B

Photographic Log



Photographic Log

XTO Energy, Inc.

Poker Lake Unit 15 Twin Wells Ranch

Incident Number nAPP2205638843 &

nAPP2207746719



Photograph 1

Date: April 18, 2022

Description: Site Assessment Activities



Photograph 2

Date: April 18, 2022

Description: Site Assessment Activities



Photograph 3

Date: July 14, 2022

Description: Delineation Activities.



Photograph 4

Date: July 15, 2022

Description: Delineation Activities

**Photographic Log**

XTO Energy, Inc.

Poker Lake Unit 15 Twin Wells Ranch

Incident Number nAPP2205638843 &

nAPP2207746719

**Photograph 5**

Date: July 15, 2022

Description: Surface Scraping activities.

**Photograph 6**

Date: July 15, 2022

Description: Surface Scraping activities.

**Photograph 7**

Date: July 14, 2022

Description: Liner Inspection

**Photograph 8**

Date: July 14, 2022

Description: Liner Inspection



APPENDIX C

Lithologic Soil Sampling Logs

		Sample Name: PH01		Date: 07.14.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843 and NAPP2207746719						
		Job Number: 03E1558017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816,-103.77067				Logged By: Conner Shore		Method: Backhoe		
				Hole Diameter: N/A		Total Depth: 4'		
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	1508	N			1'	cche	grey-brown caliche
N	ND	1620	N	PH01	2'	2'	cche	grey-brown caliche
N	ND	76.0	N	PH01A	3'	3'	sp-sm	Red-brown sandstone
N	ND	30.0	N			4'	sp-sm	Red-brown sandstone

		Sample Name: PH02		Date: 07.15.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843and NAPP2207746719						
		Job Number: 03E1558017						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816, -103.77067				Logged By: Conner Shore		Method: Hand Auger		
				Hole Diameter: 3.5"		Total Depth: 4'		
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	903	N	PH02	1'	1'	cche	grey-brown caliche
N	ND	860	N			2'	cche	grey-brown caliche
N	ND	73.0	N	PH02A	3'	3'	sp-sm	Red-brown sandstone
N	ND	44.0	N			4'	sp-sm	Red-brown sandstone

		Sample Name: PH03		Date: 07.15.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843and NAPP2207746719						
		Job Number: 03E1558015						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816, -103.77067			Logged By: Conner Shore		Method: Hand Auger			
			Hole Diameter: 3.5"		Total Depth: 4'			
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	1.2	N	PH03	0.5'	0.5'	cche	grey-brown caliche
N	ND	1.7	N	PH03A	1'	1'	cche	grey-brown caliche
N	ND	1.6	N			2'	cche	grey-brown caliche
N	ND	0.7	N	PH03B	3'	3'	sp-sm	Red-brown sandstone
N	ND	1.1	N			4'	sp-sm	Red-brown sandstone

		Sample Name: PH04		Date: 07.15.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843and NAPP2207746719						
		Job Number: 03E1558015						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816, -103.77067			Logged By: Conner Shore		Method: Hand Auger			
			Hole Diameter: 3.5"		Total Depth: 4'			
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	0.6	N	PH04	0.5'	0.5'	cche	grey-brown caliche
N	ND	0.9	N			1'	cche	grey-brown caliche
N	ND	1.6	N	PH04A	2'	2'	cche	grey-brown caliche
N	ND	1.0	N	PH04B	3'	3'	sp-sm	Red-brown sandstone
N	ND	1.3	N			4'	sp-sm	Red-brown sandstone

								Sample Name: PH05		Date: 07.15.22	
								Site Name: PLU 15 TWR			
								Incident Number: NAPP2205638843 and NAPP2207746719			
								Job Number: 03E1558015			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Conner Shore		Method: Hand Auger	
Coordinates: 32.20816, -103.77067								Hole Diameter: 3.5"		Total Depth: 4'	
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.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
N	ND	0.3	N	PH05	0.5'	0.5'	cche	grey-brown caliche			
N	ND	0.5	N			1'	cche	grey-brown caliche			
N	ND	0.7	N	PH05A	2'	2'	cche	grey-brown caliche			
N	ND	0.6	N	PH05B	3'	3'	sp-sm	Red-brown sandstone			
N	ND	0.9	N			4'	sp-sm	Red-brown sandstone			

		Sample Name: PH06		Date: 07.15.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843 and NAPP2207746719						
		Job Number: 03E1558015						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816, -103.77067			Logged By: Conner Shore		Method: Hand Auger			
			Hole Diameter: 3.5"		Total Depth: 4'			
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	1.3	N	PH06	0.5'	0.5'	cche	grey-brown caliche
N	ND	1.2	N	PH06A	1'	1'	cche	grey-brown caliche
N	ND	0.2	N			2'	cche	grey-brown caliche
N	ND	0.1	N	PH06B	3'	3'	sp-sm	Red-brown sandstone
N	ND	0.7	N			4'	sp-sm	Red-brown sandstone

		Sample Name: PH07		Date: 07.15.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843 and NAPP2207746719						
		Job Number: 03E1558015						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816, -103.77067				Logged By: Conner Shore				
				Method: Hand Auger				
				Hole Diameter: 3.5"				
				Total Depth: 4'				
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	1.4	N	PH07	0.5'	0.5'	cche	grey-brown caliche
N	ND	1.6	N	PH07A	1'	1'	cche	grey-brown caliche
N	ND	0.6	N			2'	cche	grey-brown caliche
N	ND	0.4	N	PH07B	3'	3'	sp-sm	Red-brown sandstone
N	ND	0.4	N			4'	sp-sm	Red-brown sandstone

		Sample Name: BH01		Date: 07.18.22				
		Site Name: PLU 15 TWR						
		Incident Number: NAPP2205638843 and NAPP2207746719						
		Job Number: 03E1558015						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.20816, -103.77067			Logged By: Conner Shore		Method: Hand Auger			
			Hole Diameter: 3.5"		Total Depth: 4'			
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.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	1.1	N	BH01	0.5'	0.5'	cche	grey-brown caliche
N	ND	1.0	N			1'	cche	grey-brown caliche
N	ND	0.0	N			2'	cche	grey-brown caliche
N	ND	0.0	N	BH01A	3'	3'	sp-sm	Red-brown sandstone
N	ND	0.0	N			4'	sp-sm	Red-brown sandstone



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2199-1
Laboratory Sample Delivery Group: 03E1558017
Client Project/Site: PLU 15 TWR

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

Attn: Ben Belill

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:
4/25/2022 3:58:46 PM

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

LINKS

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Have a Question?



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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 15 TWR

Laboratory Job ID: 890-2199-1
SDG: 03E1558017

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Sample Summary	17
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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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
SQL	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 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Job ID: 890-2199-1

Laboratory: Eurofins Carlsbad

Narrative	
	Job Narrative 890-2199-1

Receipt

The samples were received on 4/19/2022 12:10 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 1.4°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 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Client Sample ID: SS03

Lab Sample ID: 890-2199-1

Date Collected: 04/18/22 12:20

Matrix: Solid

Date Received: 04/19/22 12:10

Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 04:01	1
Toluene	0.00844		0.00200	mg/Kg		04/21/22 16:00	04/25/22 04:01	1
Ethylbenzene	0.00452		0.00200	mg/Kg		04/21/22 16:00	04/25/22 04:01	1
m-Xylene & p-Xylene	0.0747		0.00401	mg/Kg		04/21/22 16:00	04/25/22 04:01	1
o-Xylene	0.0178		0.00200	mg/Kg		04/21/22 16:00	04/25/22 04:01	1
Xylenes, Total	0.0925		0.00401	mg/Kg		04/21/22 16:00	04/25/22 04:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	04/21/22 16:00	04/25/22 04:01	1
1,4-Difluorobenzene (Surr)	92		70 - 130	04/21/22 16:00	04/25/22 04:01	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.105		0.00401	mg/Kg			04/25/22 16:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	69.8		50.0	mg/Kg			04/21/22 10:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 15:17	1
Diesel Range Organics (Over C10-C28)	69.8		50.0	mg/Kg		04/20/22 09:58	04/20/22 15:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 15:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130			04/20/22 09:58	04/20/22 15:17	1
o-Terphenyl	95		70 - 130			04/20/22 09:58	04/20/22 15:17	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	183		4.95	mg/Kg			04/21/22 21:35	1

Client Sample ID: SS04

Lab Sample ID: 890-2199-2

Date Collected: 04/18/22 12:30

Matrix: Solid

Date Received: 04/19/22 12:10

Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		04/21/22 16:00	04/25/22 04:22	1
Toluene	<0.00201	U	0.00201	mg/Kg		04/21/22 16:00	04/25/22 04:22	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		04/21/22 16:00	04/25/22 04:22	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		04/21/22 16:00	04/25/22 04:22	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		04/21/22 16:00	04/25/22 04:22	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		04/21/22 16:00	04/25/22 04:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	04/21/22 16:00	04/25/22 04:22	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Client Sample ID: SS04

Lab Sample ID: 890-2199-2

Date Collected: 04/18/22 12:30

Matrix: Solid

Date Received: 04/19/22 12:10

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	94		70 - 130	04/21/22 16:00	04/25/22 04:22	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			04/25/22 16:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			04/21/22 10:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 15:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 15:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 15:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130			04/20/22 09:58	04/20/22 15:59	1
o-Terphenyl	88		70 - 130			04/20/22 09:58	04/20/22 15:59	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	126		5.00	mg/Kg			04/21/22 22:01	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-13850-A-27-C MS	Matrix Spike	109	111
880-13850-A-27-D MSD	Matrix Spike Duplicate	79	82
890-2199-1	SS03	110	92
890-2199-2	SS04	109	94
LCS 880-23967/1-A	Lab Control Sample	101	93
LCSD 880-23967/2-A	Lab Control Sample Dup	102	92
MB 880-23967/5-A	Method Blank	105	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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-13895-A-1-B MS	Matrix Spike	77	81
880-13895-A-1-C MSD	Matrix Spike Duplicate	78	81
890-2199-1	SS03	87	95
890-2199-2	SS04	80	88
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-23823/2-A	Lab Control Sample	92	108
LCSD 880-23823/3-A	Lab Control Sample Dup	104	125
MB 880-23823/1-A	Method Blank	84	100
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-23967/5-A

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23967

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
Toluene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		04/21/22 16:00	04/25/22 01:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	04/21/22 16:00	04/25/22 01:58	1
1,4-Difluorobenzene (Surr)	88		70 - 130	04/21/22 16:00	04/25/22 01:58	1

Lab Sample ID: LCS 880-23967/1-A

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08769		mg/Kg		88	70 - 130
Toluene	0.100	0.09042		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.09356		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1927		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09654		mg/Kg		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-23967/2-A

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.08077		mg/Kg		81	70 - 130	8	35
Toluene	0.100	0.08128		mg/Kg		81	70 - 130	11	35
Ethylbenzene	0.100	0.08200		mg/Kg		82	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.1675		mg/Kg		84	70 - 130	14	35
o-Xylene	0.100	0.08663		mg/Kg		87	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-13850-A-27-C MS

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0998	0.1069		mg/Kg		107	70 - 130
Toluene	<0.00200	U F1	0.0998	0.1327	F1	mg/Kg		133	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

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

Lab Sample ID: 880-13850-A-27-C MS

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0998	0.1129		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.2220		mg/Kg		111	70 - 130
o-Xylene	<0.00200	U	0.0998	0.1165		mg/Kg		117	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 880-13850-A-27-D MSD

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0996	0.08759		mg/Kg		88	70 - 130	20	35
Toluene	<0.00200	U F1	0.0996	0.1108		mg/Kg		111	70 - 130	18	35
Ethylbenzene	<0.00200	U	0.0996	0.09973		mg/Kg		100	70 - 130	12	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1967		mg/Kg		99	70 - 130	12	35
o-Xylene	<0.00200	U	0.0996	0.09755		mg/Kg		98	70 - 130	18	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	79		70 - 130
1,4-Difluorobenzene (Surr)	82		70 - 130

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

Lab Sample ID: MB 880-23823/1-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23823

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 10:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 10:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 10:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	84		70 - 130	04/20/22 09:58	04/20/22 10:25	1
o-Terphenyl	100		70 - 130	04/20/22 09:58	04/20/22 10:25	1

Lab Sample ID: LCS 880-23823/2-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1021		mg/Kg		102	70 - 130
Diesel Range Organics (Over C10-C28)	1000	841.0		mg/Kg		84	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

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

Lab Sample ID: LCS 880-23823/2-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23823

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: LCSD 880-23823/3-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23823

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1035		mg/Kg		104	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1000	904.3		mg/Kg		90	70 - 130	7	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	125		70 - 130

Lab Sample ID: 880-13895-A-1-B MS

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23823

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	1000	844.7		mg/Kg		83	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	779.8		mg/Kg		75	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: 880-13895-A-1-C MSD

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23823

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	818.6		mg/Kg		80	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	782.3		mg/Kg		76	70 - 130	0	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	78		70 - 130
o-Terphenyl	81		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-23840/1-A

Matrix: Solid

Analysis Batch: 23965

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			04/21/22 18:29	1

Lab Sample ID: LCS 880-23840/2-A

Matrix: Solid

Analysis Batch: 23965

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	255.9		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-23840/3-A

Matrix: Solid

Analysis Batch: 23965

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	256.1		mg/Kg		102	90 - 110	0	20

Lab Sample ID: 880-13905-A-21-B MS

Matrix: Solid

Analysis Batch: 23965

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	7.76		248	259.5		mg/Kg		102	90 - 110

Lab Sample ID: 880-13905-A-21-C MSD

Matrix: Solid

Analysis Batch: 23965

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	7.76		248	261.5		mg/Kg		102	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

GC VOA

Prep Batch: 23967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Total/NA	Solid	5035	
890-2199-2	SS04	Total/NA	Solid	5035	
MB 880-23967/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23967/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23967/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13850-A-27-C MS	Matrix Spike	Total/NA	Solid	5035	
880-13850-A-27-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 24109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Total/NA	Solid	8021B	23967
890-2199-2	SS04	Total/NA	Solid	8021B	23967
MB 880-23967/5-A	Method Blank	Total/NA	Solid	8021B	23967
LCS 880-23967/1-A	Lab Control Sample	Total/NA	Solid	8021B	23967
LCSD 880-23967/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23967
880-13850-A-27-C MS	Matrix Spike	Total/NA	Solid	8021B	23967
880-13850-A-27-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23967

Analysis Batch: 24209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Total/NA	Solid	Total BTEX	
890-2199-2	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 23813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Total/NA	Solid	8015B NM	23823
890-2199-2	SS04	Total/NA	Solid	8015B NM	23823
MB 880-23823/1-A	Method Blank	Total/NA	Solid	8015B NM	23823
LCS 880-23823/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	23823
LCSD 880-23823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	23823
880-13895-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	23823
880-13895-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	23823

Prep Batch: 23823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Total/NA	Solid	8015NM Prep	
890-2199-2	SS04	Total/NA	Solid	8015NM Prep	
MB 880-23823/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-23823/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-23823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-13895-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-13895-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 23926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Total/NA	Solid	8015 NM	
890-2199-2	SS04	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

HPLC/IC

Leach Batch: 23840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Soluble	Solid	DI Leach	
890-2199-2	SS04	Soluble	Solid	DI Leach	
MB 880-23840/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-23840/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-23840/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-13905-A-21-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-13905-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 23965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2199-1	SS03	Soluble	Solid	300.0	23840
890-2199-2	SS04	Soluble	Solid	300.0	23840
MB 880-23840/1-A	Method Blank	Soluble	Solid	300.0	23840
LCS 880-23840/2-A	Lab Control Sample	Soluble	Solid	300.0	23840
LCSD 880-23840/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	23840
880-13905-A-21-B MS	Matrix Spike	Soluble	Solid	300.0	23840
880-13905-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23840

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Client Sample ID: SS03

Lab Sample ID: 890-2199-1

Date Collected: 04/18/22 12:20

Matrix: Solid

Date Received: 04/19/22 12:10

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	23967	04/21/22 16:00	MR	XEN MID
Total/NA	Analysis	8021B		1			24109	04/25/22 04:01	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			24209	04/25/22 16:29	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23926	04/21/22 10:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	23823	04/20/22 09:58	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23813	04/20/22 15:17	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	23840	04/20/22 12:38	SC	XEN MID
Soluble	Analysis	300.0		1			23965	04/21/22 21:35	CH	XEN MID

Client Sample ID: SS04

Lab Sample ID: 890-2199-2

Date Collected: 04/18/22 12:30

Matrix: Solid

Date Received: 04/19/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	23967	04/21/22 16:00	MR	XEN MID
Total/NA	Analysis	8021B		1			24109	04/25/22 04:22	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			24209	04/25/22 16:29	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23926	04/21/22 10:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	23823	04/20/22 09:58	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23813	04/20/22 15:59	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	23840	04/20/22 12:38	SC	XEN MID
Soluble	Analysis	300.0		1			23965	04/21/22 22:01	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

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	T104704400-21-22	06-30-22

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2199-1
SDG: 03E1558017

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2199-1	SS03	Solid	04/18/22 12:20	04/19/22 12:10	0.5
890-2199-2	SS04	Solid	04/18/22 12:30	04/19/22 12:10	0.5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Houston, TX (281) 240-4200, Dallas, TX (214) 502-0300
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 7 of 7

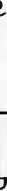
Work Order Comments	
Program: UST/PST	☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:	
Reporting: Level II	☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD	☐ ADAPT ☐ Other:

Project Name:		PLU 15 TWR		Turn Around						Pres. Code										Preservative Codes			
Project Number:		05E1558017		☒ Routine ☐ Rush																None: NO		DI Water: H ₂ O	
Project Location:		EDDY COUNTY, NM		Due Date:																Cool: Cool		MeOH: Me	
Sampler's Name:		Ben Bejili		TAT starts the day received by the lab, if received by 4:30pm																HCL: HC		HNO ₃ : HN	
PO #:		NAPP207746719		Wet Ice:		☒ Yes ☐ No														H ₂ SO ₄ : H ₂		NaOH: Na	
SAMPLE RECEIPT				Temp Blank:		☒ Yes ☐ No		Thermometer ID:		12 MW 007										H ₃ PO ₄ : HP			
Samples Received Intact:		☒ Yes ☐ No		Correction Factor:																NaHSO ₄ : NABIS			
Cooler Custody Seals:		☒ Yes ☐ No		Temperature Reading:		1.4														Na ₂ S ₂ O ₃ : NaSO ₃			
Sample Custody Seals:		☒ Yes ☐ No		Corrected Temperature:		1.4														Zn Acetate+NaOH: Zn			
Total Containers:																				NaOH+Ascorbic Acid: SAPC			

[illegible]

Total	200.7 / 6010	200.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed	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 Ti Sn U V Zr	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg. 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document indicating fulfillment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions for service. Eurofins Xeno 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 Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, but not analyzed. These terms will be enforced unless previously negotiated. Eurofins Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

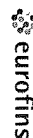
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		4/19/22 01:10			

Revised Date: 08/25/2020 Rev: 2020

Eurofins Carlsbad

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

Chain of Custody Record



**Environment Testings
America**

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2199-1

SDG Number: 03E1558017

Login Number: 2199

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: 890-2199-1

SDG Number: 03E1558017

Login Number: 2199

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 04/20/22 10:37 AM

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



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2200-1
Laboratory Sample Delivery Group: 03E1558017
Client Project/Site: PLU 15 TWR

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

Attn: Ben Belill

Authorized for release by:
4/25/2022 4:03:49 PM

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

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results through

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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 15 TWR

Laboratory Job ID: 890-2200-1
SDG: 03E1558017

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Qualifiers

GC 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.

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Job ID: 890-2200-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2200-1****Receipt**

The samples were received on 4/19/2022 12:10 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 1.4°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-24111 and analytical batch 880-24110 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.

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-2200-1) and SS02 (890-2200-2). Evidence of matrix interferences is not obvious.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Client Sample ID: SS01

Lab Sample ID: 890-2200-1

Date Collected: 04/18/22 12:00

Matrix: Solid

Date Received: 04/19/22 12:10

Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.101	U	0.101	mg/Kg		04/21/22 16:00	04/25/22 05:03	50
Toluene	3.92		0.101	mg/Kg		04/21/22 16:00	04/25/22 05:03	50
Ethylbenzene	3.89		0.101	mg/Kg		04/21/22 16:00	04/25/22 05:03	50
m-Xylene & p-Xylene	23.5		0.202	mg/Kg		04/21/22 16:00	04/25/22 05:03	50
o-Xylene	6.12		0.101	mg/Kg		04/21/22 16:00	04/25/22 05:03	50
Xylenes, Total	29.6		0.202	mg/Kg		04/21/22 16:00	04/25/22 05:03	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130	04/21/22 16:00	04/25/22 05:03	50
1,4-Difluorobenzene (Surr)	94		70 - 130	04/21/22 16:00	04/25/22 05:03	50

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	37.4		0.202	mg/Kg			04/25/22 12:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	8580		50.0	mg/Kg			04/21/22 10:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1200		50.0	mg/Kg		04/20/22 09:58	04/20/22 17:23	1
Diesel Range Organics (Over C10-C28)	7380		50.0	mg/Kg		04/20/22 09:58	04/20/22 17:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 17:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130	04/20/22 09:58	04/20/22 17:23	1
o-Terphenyl	147	S1+	70 - 130	04/20/22 09:58	04/20/22 17:23	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	578		25.3	mg/Kg			04/21/22 22:10	5

Client Sample ID: SS02

Lab Sample ID: 890-2200-2

Date Collected: 04/18/22 12:10

Matrix: Solid

Date Received: 04/19/22 12:10

Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0237		0.00200	mg/Kg		04/21/22 16:00	04/25/22 04:42	1
Toluene	4.06		0.201	mg/Kg		04/24/22 22:21	04/25/22 10:59	100
Ethylbenzene	3.68		0.201	mg/Kg		04/24/22 22:21	04/25/22 10:59	100
m-Xylene & p-Xylene	29.4		0.402	mg/Kg		04/24/22 22:21	04/25/22 10:59	100
o-Xylene	7.78		0.201	mg/Kg		04/24/22 22:21	04/25/22 10:59	100
Xylenes, Total	37.2		0.402	mg/Kg		04/24/22 22:21	04/25/22 10:59	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	403	S1+	70 - 130	04/21/22 16:00	04/25/22 04:42	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Client Sample ID: SS02

Lab Sample ID: 890-2200-2

Date Collected: 04/18/22 12:10

Matrix: Solid

Date Received: 04/19/22 12:10

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	99		70 - 130	04/21/22 16:00	04/25/22 04:42	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	44.9		0.402	mg/Kg			04/25/22 12:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	7700		49.9	mg/Kg			04/21/22 10:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1150		49.9	mg/Kg		04/20/22 09:58	04/20/22 17:45	1
Diesel Range Organics (Over C10-C28)	6550		49.9	mg/Kg		04/20/22 09:58	04/20/22 17:45	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		04/20/22 09:58	04/20/22 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130	04/20/22 09:58	04/20/22 17:45	1
o-Terphenyl	134	S1+	70 - 130	04/20/22 09:58	04/20/22 17:45	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	56.4		4.99	mg/Kg			04/21/22 22:19	1

Eurofins Carlsbad

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-13850-A-1-H MS	Matrix Spike	102	95
880-13850-A-1-I MSD	Matrix Spike Duplicate	97	99
880-13850-A-27-C MS	Matrix Spike	109	111
880-13850-A-27-D MSD	Matrix Spike Duplicate	79	82
890-2200-1	SS01	126	94
890-2200-2	SS02	403 S1+	99
LCS 880-23967/1-A	Lab Control Sample	101	93
LCS 880-24111/1-A	Lab Control Sample	97	95
LCSD 880-23967/2-A	Lab Control Sample Dup	102	92
LCSD 880-24111/2-A	Lab Control Sample Dup	99	99
MB 880-23967/5-A	Method Blank	105	88
MB 880-24111/5-A	Method Blank	99	96
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-13895-A-1-B MS	Matrix Spike	77	81
880-13895-A-1-C MSD	Matrix Spike Duplicate	78	81
890-2200-1	SS01	116	147 S1+
890-2200-2	SS02	115	134 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-23823/2-A	Lab Control Sample	92	108
LCSD 880-23823/3-A	Lab Control Sample Dup	104	125
MB 880-23823/1-A	Method Blank	84	100
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-23967/5-A

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23967

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
Toluene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/21/22 16:00	04/25/22 01:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		04/21/22 16:00	04/25/22 01:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	04/21/22 16:00	04/25/22 01:58	1
1,4-Difluorobenzene (Surr)	88		70 - 130	04/21/22 16:00	04/25/22 01:58	1

Lab Sample ID: LCS 880-23967/1-A

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08769		mg/Kg		88	70 - 130
Toluene	0.100	0.09042		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.09356		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1927		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09654		mg/Kg		97	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-23967/2-A

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08077		mg/Kg		81	70 - 130	8	35
Toluene	0.100	0.08128		mg/Kg		81	70 - 130	11	35
Ethylbenzene	0.100	0.08200		mg/Kg		82	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.1675		mg/Kg		84	70 - 130	14	35
o-Xylene	0.100	0.08663		mg/Kg		87	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-13850-A-27-C MS

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0998	0.1069		mg/Kg		107	70 - 130
Toluene	<0.00200	U F1	0.0998	0.1327	F1	mg/Kg		133	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

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

Lab Sample ID: 880-13850-A-27-C MS

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0998	0.1129		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.2220		mg/Kg		111	70 - 130
o-Xylene	<0.00200	U	0.0998	0.1165		mg/Kg		117	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 880-13850-A-27-D MSD

Matrix: Solid

Analysis Batch: 24109

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23967

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0996	0.08759		mg/Kg		88	70 - 130	20	35
Toluene	<0.00200	U F1	0.0996	0.1108		mg/Kg		111	70 - 130	18	35
Ethylbenzene	<0.00200	U	0.0996	0.09973		mg/Kg		100	70 - 130	12	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1967		mg/Kg		99	70 - 130	12	35
o-Xylene	<0.00200	U	0.0996	0.09755		mg/Kg		98	70 - 130	18	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	79		70 - 130
1,4-Difluorobenzene (Surr)	82		70 - 130

Lab Sample ID: MB 880-24111/5-A

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 24111

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/24/22 22:21	04/25/22 01:09	1
Toluene	<0.00200	U	0.00200	mg/Kg		04/24/22 22:21	04/25/22 01:09	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/24/22 22:21	04/25/22 01:09	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		04/24/22 22:21	04/25/22 01:09	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/24/22 22:21	04/25/22 01:09	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		04/24/22 22:21	04/25/22 01:09	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	04/24/22 22:21	04/25/22 01:09	1
1,4-Difluorobenzene (Surr)	96		70 - 130	04/24/22 22:21	04/25/22 01:09	1

Lab Sample ID: LCS 880-24111/1-A

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 24111

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07124		mg/Kg		71	70 - 130
Toluene	0.100	0.09089		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09549		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1938		mg/Kg		97	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

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

Lab Sample ID: LCS 880-24111/1-A

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 24111

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.09767		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-24111/2-A

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 24111

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07926		mg/Kg		79	70 - 130	11	35
Toluene	0.100	0.09758		mg/Kg		98	70 - 130	7	35
Ethylbenzene	0.100	0.1017		mg/Kg		102	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2056		mg/Kg		103	70 - 130	6	35
o-Xylene	0.100	0.1035		mg/Kg		104	70 - 130	6	35

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

Lab Sample ID: 880-13850-A-1-H MS

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 24111

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.100	0.09875		mg/Kg		99	70 - 130
Toluene	<0.00200	U F1	0.100	0.1308	F1	mg/Kg		131	70 - 130
Ethylbenzene	<0.00200	U	0.100	0.1271		mg/Kg		127	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.200	0.2702	F1	mg/Kg		135	70 - 130
o-Xylene	<0.00200	U	0.100	0.1254		mg/Kg		125	70 - 130

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

Lab Sample ID: 880-13850-A-1-I MSD

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 24111

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0996	0.1096		mg/Kg		110	70 - 130	10	35
Toluene	<0.00200	U F1	0.0996	0.1232		mg/Kg		124	70 - 130	6	35
Ethylbenzene	<0.00200	U	0.0996	0.1164		mg/Kg		117	70 - 130	9	35
m-Xylene & p-Xylene	<0.00401	U F1	0.199	0.2439		mg/Kg		122	70 - 130	10	35
o-Xylene	<0.00200	U	0.0996	0.1147		mg/Kg		115	70 - 130	9	35

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

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

Lab Sample ID: 880-13850-A-1-I MSD

Matrix: Solid

Analysis Batch: 24110

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 24111

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-23823/1-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23823

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 10:25	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 10:25	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/20/22 09:58	04/20/22 10:25	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
1-Chlorooctane	84		70 - 130			04/20/22 09:58	04/20/22 10:25	1	
o-Terphenyl	100		70 - 130			04/20/22 09:58	04/20/22 10:25	1	

Lab Sample ID: LCS 880-23823/2-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23823

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	1021		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	841.0		mg/Kg		84	70 - 130		
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	92		70 - 130						
o-Terphenyl	108		70 - 130						

Lab Sample ID: LCSD 880-23823/3-A

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23823

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1035		mg/Kg		104	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1000	904.3		mg/Kg		90	70 - 130	7	20
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	104		70 - 130						
o-Terphenyl	125		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

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

Lab Sample ID: 880-13895-A-1-B MS

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23823

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	1000	844.7		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	779.8		mg/Kg		75	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	77		70 - 130						
o-Terphenyl	81		70 - 130						

Lab Sample ID: 880-13895-A-1-C MSD

Matrix: Solid

Analysis Batch: 23813

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23823

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	818.6		mg/Kg		80	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	782.3		mg/Kg		76	70 - 130	0	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	78		70 - 130								
o-Terphenyl	81		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-23840/1-A

Matrix: Solid

Analysis Batch: 23965

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			04/21/22 18:29	1

Lab Sample ID: LCS 880-23840/2-A

Matrix: Solid

Analysis Batch: 23965

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	255.9		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-23840/3-A

Matrix: Solid

Analysis Batch: 23965

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	256.1		mg/Kg		102	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-13905-A-21-B MS

Matrix: Solid

Analysis Batch: 23965

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	7.76		248	259.5		mg/Kg		102	90 - 110		

Lab Sample ID: 880-13905-A-21-C MSD

Matrix: Solid

Analysis Batch: 23965

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	7.76		248	261.5		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 890-2198-A-2-C MS

Matrix: Solid

Analysis Batch: 23965

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	155	F1	1250	1543	F1	mg/Kg		111	90 - 110		

Lab Sample ID: 890-2198-A-2-D MSD

Matrix: Solid

Analysis Batch: 23965

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	155	F1	1250	1514		mg/Kg		109	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

GC VOA

Prep Batch: 23967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Total/NA	Solid	5035	
890-2200-2	SS02	Total/NA	Solid	5035	
MB 880-23967/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23967/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23967/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13850-A-27-C MS	Matrix Spike	Total/NA	Solid	5035	
880-13850-A-27-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 24109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Total/NA	Solid	8021B	23967
890-2200-2	SS02	Total/NA	Solid	8021B	23967
MB 880-23967/5-A	Method Blank	Total/NA	Solid	8021B	23967
LCS 880-23967/1-A	Lab Control Sample	Total/NA	Solid	8021B	23967
LCSD 880-23967/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23967
880-13850-A-27-C MS	Matrix Spike	Total/NA	Solid	8021B	23967
880-13850-A-27-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23967

Analysis Batch: 24110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-2	SS02	Total/NA	Solid	8021B	24111
MB 880-24111/5-A	Method Blank	Total/NA	Solid	8021B	24111
LCS 880-24111/1-A	Lab Control Sample	Total/NA	Solid	8021B	24111
LCSD 880-24111/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	24111
880-13850-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	24111
880-13850-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	24111

Prep Batch: 24111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-2	SS02	Total/NA	Solid	5035	
MB 880-24111/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-24111/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-24111/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13850-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
880-13850-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 24178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Total/NA	Solid	Total BTEX	
890-2200-2	SS02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 23813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Total/NA	Solid	8015B NM	23823
890-2200-2	SS02	Total/NA	Solid	8015B NM	23823
MB 880-23823/1-A	Method Blank	Total/NA	Solid	8015B NM	23823
LCS 880-23823/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	23823
LCSD 880-23823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	23823
880-13895-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	23823

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

GC Semi VOA (Continued)

Analysis Batch: 23813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13895-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	23823

Prep Batch: 23823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Total/NA	Solid	8015NM Prep	
890-2200-2	SS02	Total/NA	Solid	8015NM Prep	
MB 880-23823/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-23823/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-23823/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-13895-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-13895-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 23927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Total/NA	Solid	8015 NM	
890-2200-2	SS02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 23840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Soluble	Solid	DI Leach	
890-2200-2	SS02	Soluble	Solid	DI Leach	
MB 880-23840/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-23840/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-23840/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-13905-A-21-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-13905-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2198-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2198-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 23965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2200-1	SS01	Soluble	Solid	300.0	23840
890-2200-2	SS02	Soluble	Solid	300.0	23840
MB 880-23840/1-A	Method Blank	Soluble	Solid	300.0	23840
LCS 880-23840/2-A	Lab Control Sample	Soluble	Solid	300.0	23840
LCSD 880-23840/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	23840
880-13905-A-21-B MS	Matrix Spike	Soluble	Solid	300.0	23840
880-13905-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23840
890-2198-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	23840
890-2198-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23840

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Client Sample ID: SS01

Lab Sample ID: 890-2200-1

Date Collected: 04/18/22 12:00

Matrix: Solid

Date Received: 04/19/22 12:10

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	23967	04/21/22 16:00	MR	XEN MID
Total/NA	Analysis	8021B		50			24109	04/25/22 05:03	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			24178	04/25/22 12:21	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23927	04/21/22 10:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	23823	04/20/22 09:58	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23813	04/20/22 17:23	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	23840	04/20/22 12:38	SC	XEN MID
Soluble	Analysis	300.0		5			23965	04/21/22 22:10	CH	XEN MID

Client Sample ID: SS02

Lab Sample ID: 890-2200-2

Date Collected: 04/18/22 12:10

Matrix: Solid

Date Received: 04/19/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	24111	04/24/22 22:21	MR	XEN MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	24110	04/25/22 10:59	MR	XEN MID
Total/NA	Prep	5035			4.99 g	5 mL	23967	04/21/22 16:00	MR	XEN MID
Total/NA	Analysis	8021B		1			24109	04/25/22 04:42	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			24178	04/25/22 12:21	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23927	04/21/22 10:45	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23823	04/20/22 09:58	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23813	04/20/22 17:45	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	23840	04/20/22 12:38	SC	XEN MID
Soluble	Analysis	300.0		1			23965	04/21/22 22:19	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

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	T104704400-21-22	06-30-22

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2200-1
SDG: 03E1558017

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2200-1	SS01	Solid	04/18/22 12:00	04/19/22 12:10	0.5
890-2200-2	SS02	Solid	04/18/22 12:10	04/19/22 12:10	0.5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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) 986-3199

Work Order No.:

Page _____ of _____
www.xenco.com

Project Manager:	Ben Bellill	Bill to: (if different)	Adrian Baker
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	2351 W Northwest Hwy Suite 1203A	Address:	3104 E. Green Street
City, State ZIP:	Dallas, TX 75220	City, State ZIP:	Carlsbad, NM 86220
Phone:	9898540852	Email:	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDO ☐ ADaPT ☐ Other: _____

Project Name:		PLU 15 TWR		Turn Around		Pres. Code		ANALYSIS REQUEST										Preservative Codes					
Project Number:		03E1958017		☒ Routine ☐ Rush														None: NO					
Project Location:		EDDY COUNTY, NM		Due Date:														Cool: Cool					
Sampler's Name:		Ben Bejill		TAT starts the day received by the lab, if received by 4:30pm														HCL: HC					
PO #:		NAPP2207746719		Wet Ice:		Yes No												H ₂ SO ₄ : H ₂					
SAMPLE RECEIPT		Temp Blank:		☒ Yes ☐ No		Thermometer ID:		TW M-004												H ₃ PO ₄ : HP			
Samples Received Intact:		☒ Yes ☐ No		Correction Factor:		-0.2												NaHSO ₄ : NABIS					
Cooler Custody Seals:		Yes No N/A		Temperature Reading:		1.6												Na ₂ S ₂ O ₃ : NaSO ₃					
Sample Custody Seals:		Yes No N/A		Corrected Temperature:		1.2												Zn Acetate+NaOH: Zn					
Total Containers:																		NaOH+Ascorbic Acid: SAPC					

[illegible]

Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020:	200.7 / 6010
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 Ti Sn U V Zn	
TCPLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti 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 \$38.00 will be applied to each project and a charge of \$6 for each sample submitted to Eurofins Xenco but not analyzed. These terms will be enforced unless previously negotiated.

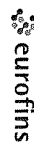
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 	 4-19-22	4/19/2022	2		
3			4		
5			6		

Revised Date 09/25/2020 Rev. 2022

Eurofins Carlsbad

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

Chain of Custody Record



Environment Testing America

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2200-1

SDG Number: 03E1558017

Login Number: 2200

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: 890-2200-1

SDG Number: 03E1558017

Login Number: 2200

List Number: 2

Creator: Teel, Brianna

List Source: Eurofins Midland

List Creation: 04/20/22 10:37 AM

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



Environment Testing
America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2569-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: PLU 15 TWR

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

Authorized for release by:

7/25/2022 10:38:42 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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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 15 TWR

Laboratory Job ID: 890-2569-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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, high 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, high biased.
*1	LCS/LCSD RPD 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.
α	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 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Job ID: 890-2569-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2569-1****Receipt**

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: PH01 (890-2569-1) and PH01A (890-2569-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30267 and analytical batch 880-30326 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: PH01 (890-2569-1) and (880-17211-A-1-C). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-30080/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: PH01 (890-2569-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30080 and analytical batch 880-30146 was outside the upper control limits.

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-30080 and analytical batch 880-30146 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Client Sample ID: PH01

Lab Sample ID: 890-2569-1

Date Collected: 07/14/22 10:25

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 2'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0106		0.00200	mg/Kg		07/21/22 09:27	07/21/22 14:27	1
Toluene	0.854		0.199	mg/Kg		07/21/22 13:37	07/22/22 22:33	100
Ethylbenzene	4.26		0.199	mg/Kg		07/21/22 13:37	07/22/22 22:33	100
m-Xylene & p-Xylene	9.98		0.398	mg/Kg		07/21/22 13:37	07/22/22 22:33	100
o-Xylene	5.19		0.199	mg/Kg		07/21/22 13:37	07/22/22 22:33	100
Xylenes, Total	15.2		0.398	mg/Kg		07/21/22 13:37	07/22/22 22:33	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	758	S1+	70 - 130	07/21/22 09:27	07/21/22 14:27	1
1,4-Difluorobenzene (Surr)	102		70 - 130	07/21/22 09:27	07/21/22 14:27	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	20.3		0.398	mg/Kg			07/21/22 15:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	6340		50.0	mg/Kg			07/21/22 12:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1770	*1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 22:21	1
Diesel Range Organics (Over C10-C28)	3850	*1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 22:21	1
Oil Range Organics (Over C28-C36)	721		50.0	mg/Kg		07/19/22 16:15	07/20/22 22:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	134	S1+	70 - 130	07/19/22 16:15	07/20/22 22:21	1
o-Terphenyl	120		70 - 130	07/19/22 16:15	07/20/22 22:21	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	101		5.00	mg/Kg			07/22/22 09:17	1

Client Sample ID: PH01A

Lab Sample ID: 890-2569-2

Date Collected: 07/14/22 10:30

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:27	07/21/22 14:06	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:27	07/21/22 14:06	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:27	07/21/22 14:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/21/22 09:27	07/21/22 14:06	1
o-Xylene	0.00222		0.00199	mg/Kg		07/21/22 09:27	07/21/22 14:06	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/21/22 09:27	07/21/22 14:06	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Client Sample ID: PH01A

Lab Sample ID: 890-2569-2

Date Collected: 07/14/22 10:30

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	154	S1+	70 - 130	07/21/22 09:27	07/21/22 14:06	1
1,4-Difluorobenzene (Surr)	97		70 - 130	07/21/22 09:27	07/21/22 14:06	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/21/22 15:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 12:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 22:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 22:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 22:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	106		70 - 130			07/19/22 16:15	07/20/22 22:42	1
o-Terphenyl	120		70 - 130			07/19/22 16:15	07/20/22 22:42	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.9		4.99	mg/Kg			07/22/22 09:45	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-16985-A-1-H MS	Matrix Spike	107	87
880-16985-A-1-I MSD	Matrix Spike Duplicate	118	94
880-17211-A-1-A MS	Matrix Spike	101	99
880-17211-A-1-B MSD	Matrix Spike Duplicate	111	90
890-2569-1	PH01	758 S1+	102
890-2569-2	PH01A	154 S1+	97
LCS 880-30209/1-A	Lab Control Sample	116	93
LCS 880-30267/1-A	Lab Control Sample	120	96
LCSD 880-30209/2-A	Lab Control Sample Dup	96	104
LCSD 880-30267/2-A	Lab Control Sample Dup	94	105
MB 880-30209/5-A	Method Blank	101	104
MB 880-30267/5-A	Method Blank	97	109
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17086-A-11-C MS	Matrix Spike	87	85
880-17086-A-11-D MSD	Matrix Spike Duplicate	88	87
890-2569-1	PH01	134 S1+	120
890-2569-2	PH01A	106	120
LCS 880-30080/2-A	Lab Control Sample	150 S1+	149 S1+
LCSD 880-30080/3-A	Lab Control Sample Dup	114	115
MB 880-30080/1-A	Method Blank	141 S1+	168 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30209/5-A

Matrix: Solid

Analysis Batch: 30192

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30209

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:27	07/21/22 11:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:27	07/21/22 11:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:27	07/21/22 11:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:27	07/21/22 11:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:27	07/21/22 11:20	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:27	07/21/22 11:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	07/21/22 09:27	07/21/22 11:20	1
1,4-Difluorobenzene (Surr)	104		70 - 130	07/21/22 09:27	07/21/22 11:20	1

Lab Sample ID: LCS 880-30209/1-A

Matrix: Solid

Analysis Batch: 30192

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08401		mg/Kg		84	70 - 130
Toluene	0.100	0.09906		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1113		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	0.200	0.2318		mg/Kg		116	70 - 130
o-Xylene	0.100	0.1269		mg/Kg		127	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-30209/2-A

Matrix: Solid

Analysis Batch: 30192

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30209

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1030		mg/Kg		103	70 - 130	20	35
Toluene	0.100	0.09343		mg/Kg		93	70 - 130	6	35
Ethylbenzene	0.100	0.09535		mg/Kg		95	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1889		mg/Kg		94	70 - 130	20	35
o-Xylene	0.100	0.1032		mg/Kg		103	70 - 130	21	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 880-16985-A-1-H MS

Matrix: Solid

Analysis Batch: 30192

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30209

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.07821		mg/Kg		78	70 - 130
Toluene	<0.00201	U	0.0998	0.09070		mg/Kg		91	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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

Lab Sample ID: 880-16985-A-1-H MS

Matrix: Solid

Analysis Batch: 30192

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30209

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.0998	0.09555		mg/Kg		96	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1898		mg/Kg		95	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)	107		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

Lab Sample ID: 880-16985-A-1-I MSD

Matrix: Solid

Analysis Batch: 30192

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30209

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.100	0.08560		mg/Kg		85	70 - 130	9	35
Toluene	<0.00201	U	0.100	0.09653		mg/Kg		96	70 - 130	6	35
Ethylbenzene	<0.00201	U	0.100	0.1057		mg/Kg		105	70 - 130	10	35
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2190		mg/Kg		109	70 - 130	14	35
o-Xylene	<0.00201	U	0.100	0.1191		mg/Kg		119	70 - 130	16	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: MB 880-30267/5-A

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30267

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 13:37	07/22/22 11:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 13:37	07/22/22 11:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 13:37	07/22/22 11:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 13:37	07/22/22 11:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 13:37	07/22/22 11:11	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 13:37	07/22/22 11:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	07/21/22 13:37	07/22/22 11:11	1
1,4-Difluorobenzene (Surr)	109		70 - 130	07/21/22 13:37	07/22/22 11:11	1

Lab Sample ID: LCS 880-30267/1-A

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30267

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08370		mg/Kg		84	70 - 130
Toluene	0.100	0.09615		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.1058		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	0.200	0.2262		mg/Kg		113	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30267/1-A

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30267

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.1266		mg/Kg		127	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-30267/2-A

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30267

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1006		mg/Kg		101	70 - 130	18	35
Toluene	0.100	0.08529		mg/Kg		85	70 - 130	12	35
Ethylbenzene	0.100	0.08257		mg/Kg		83	70 - 130	25	35
m-Xylene & p-Xylene	0.200	0.1615		mg/Kg		81	70 - 130	33	35
o-Xylene	0.100	0.09189		mg/Kg		92	70 - 130	32	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 880-17211-A-1-A MS

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30267

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.0998	0.03468	F1	mg/Kg		34	70 - 130
Toluene	<0.00200	U F1 F2	0.0998	0.03720	F1	mg/Kg		37	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.0998	0.03732	F1	mg/Kg		37	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.200	0.07597	F1	mg/Kg		37	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0998	0.04442	F1	mg/Kg		45	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-17211-A-1-B MSD

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30267

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.100	0.07374	F2	mg/Kg		73	70 - 130	72	35
Toluene	<0.00200	U F1 F2	0.100	0.08333	F2	mg/Kg		82	70 - 130	77	35
Ethylbenzene	<0.00200	U F1 F2	0.100	0.08673	F2	mg/Kg		86	70 - 130	80	35
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.201	0.1786	F2	mg/Kg		88	70 - 130	81	35
o-Xylene	<0.00200	U F1 F2	0.100	0.09829	F2	mg/Kg		98	70 - 130	75	35

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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

Lab Sample ID: 880-17211-A-1-B MSD

Matrix: Solid

Analysis Batch: 30326

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30267

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

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

Lab Sample ID: MB 880-30080/1-A

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30080

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 15:46	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 15:46	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 15:46	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
1-Chlorooctane	141	S1+	70 - 130			07/19/22 16:15	07/20/22 15:46	1	
o-Terphenyl	168	S1+	70 - 130			07/19/22 16:15	07/20/22 15:46	1	

Lab Sample ID: LCS 880-30080/2-A

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30080

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	1334	*+	mg/Kg		133	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	1530	*+	mg/Kg		153	70 - 130		
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	150	S1+	70 - 130						
o-Terphenyl	149	S1+	70 - 130						

Lab Sample ID: LCSD 880-30080/3-A

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30080

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1032	*1	mg/Kg		103	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	1000	1144	*1	mg/Kg		114	70 - 130	29	20
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	114		70 - 130						
o-Terphenyl	115		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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

Lab Sample ID: 880-17086-A-11-C MS

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30080

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1 *+	1000	983.6		mg/Kg		96	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U *1 *+	1000	843.1		mg/Kg		84	70 - 130		

Lab Sample ID: 880-17086-A-11-D MSD

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30080

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limits
	Result	Qualifier	Added	Result	Qualifier				Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1 *+	999	989.4		mg/Kg		97	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1 *+	999	863.0		mg/Kg		86	70 - 130	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	88		70 - 130								
o-Terphenyl	87		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2569-1 MS										Client Sample ID: PH01		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 30226												
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits			
Chloride	101		250	370.4		mg/Kg		108	90 - 110			

Lab Sample ID: 890-2569-1 MSD										Client Sample ID: PH01		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 30226												
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit	
Chloride	101		250	371.7		mg/Kg		108	90 - 110	0	20	

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	8021B	30209
890-2569-2	PH01A	Total/NA	Solid	8021B	30209
MB 880-30209/5-A	Method Blank	Total/NA	Solid	8021B	30209
LCS 880-30209/1-A	Lab Control Sample	Total/NA	Solid	8021B	30209
LCSD 880-30209/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30209
880-16985-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	30209
880-16985-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30209

Prep Batch: 30209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	5035	
890-2569-2	PH01A	Total/NA	Solid	5035	
MB 880-30209/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30209/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30209/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-16985-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
880-16985-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 30267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	5035	
MB 880-30267/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30267/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30267/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17211-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-17211-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	Total BTEX	
890-2569-2	PH01A	Total/NA	Solid	Total BTEX	

Analysis Batch: 30326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	8021B	30267
MB 880-30267/5-A	Method Blank	Total/NA	Solid	8021B	30267
LCS 880-30267/1-A	Lab Control Sample	Total/NA	Solid	8021B	30267
LCSD 880-30267/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30267
880-17211-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	30267
880-17211-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30267

GC Semi VOA

Prep Batch: 30080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	8015NM Prep	
890-2569-2	PH01A	Total/NA	Solid	8015NM Prep	
MB 880-30080/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30080/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30080/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17086-A-11-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

GC Semi VOA (Continued)

Prep Batch: 30080 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17086-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	8015B NM	30080
890-2569-2	PH01A	Total/NA	Solid	8015B NM	30080
MB 880-30080/1-A	Method Blank	Total/NA	Solid	8015B NM	30080
LCS 880-30080/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30080
LCSD 880-30080/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30080
880-17086-A-11-C MS	Matrix Spike	Total/NA	Solid	8015B NM	30080
880-17086-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30080

Analysis Batch: 30254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Total/NA	Solid	8015 NM	
890-2569-2	PH01A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Soluble	Solid	DI Leach	
890-2569-2	PH01A	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2569-1 MS	PH01	Soluble	Solid	DI Leach	
890-2569-1 MSD	PH01	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2569-1	PH01	Soluble	Solid	300.0	30059
890-2569-2	PH01A	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2569-1 MS	PH01	Soluble	Solid	300.0	30059
890-2569-1 MSD	PH01	Soluble	Solid	300.0	30059

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Client Sample ID: PH01

Lab Sample ID: 890-2569-1

Date Collected: 07/14/22 10:25

Matrix: Solid

Date Received: 07/18/22 12:12

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	30209	07/21/22 09:27	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30192	07/21/22 14:27	MR	XEN MID
Total/NA	Prep	5035			5.03 g	5 mL	30267	07/21/22 13:37	MR	XEN MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	30326	07/22/22 22:33	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30295	07/21/22 15:53	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30254	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30080	07/19/22 16:15	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30146	07/20/22 22:21	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 09:17	SMC	XEN MID

Client Sample ID: PH01A

Lab Sample ID: 890-2569-2

Date Collected: 07/14/22 10:30

Matrix: Solid

Date Received: 07/18/22 12:12

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	30209	07/21/22 09:27	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30192	07/21/22 14:06	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30295	07/21/22 15:53	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30254	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30080	07/19/22 16:15	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30146	07/20/22 22:42	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 09:45	SMC	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2569-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2569-1	PH01	Solid	07/14/22 10:25	07/18/22 12:12	2'
890-2569-2	PH01A	Solid	07/14/22 10:30	07/18/22 12:12	3'

- 1
- 2
- 3
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- 12
- 13
- 14



Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

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Project Manager:	Ben Bellill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	9898540852	Email:	bbellill@ensolum.com

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 15 TWR	Turn Around	☒ Routine ☐ Rush	Pres. Code	ANALYSIS REQUEST		Preservative Codes
Project Number:	03E1558015						None: NO DI Water: H ₂ O
Project Location:	EDDY COUNTY, NM	Due Date:					Cool: Cool MeOH: Me
Sampler's Name:	Conner Shore	TAT starts the day received by the lab, if received by 4:30pm					HCL: HC HNO ₃ : HN
PO #:							H ₂ SO ₄ : H ₂ NaOH: Na
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Thermometer ID: ☒ Yes ☒ No	Well Ice: ☒ Yes ☒ No				H ₃ PO ₄ : HP
Samples Received Intact:	☒ Yes ☒ No	Correction Factor: ☒ Yes ☒ No					NaHSO ₄ : NABIS
Cooler Custody Seals:	☒ Yes ☒ No	Temperature Reading: ☒ Yes ☒ No					Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals:	☒ Yes ☒ No	Corrected Temperature: ☒ Yes ☒ No					Zn Acetate+NaOH: Zn
Total Containers:							NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
PH01	S	7/15/2022	1025	2'	Comp	1	
PH01A	S	7/15/2022	1030	3'	Comp	1	
PH01B	S	7/15/2022	1040	4'	Comp	1	
							*HOLD Pending 3' sample
							Cost Center: 2027711001
							Incident Numbers: NAPP2205638843, NAPP2207746719



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 Ti 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 Ti 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)
1 AS	Amara Singh	7/15/2022 1812	
3			
5			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2569-1

SDG Number: 03E1558015

Login Number: 2569

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: 890-2569-1

SDG Number: 03E1558015

Login Number: 2569

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/19/22 11:13 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	



Environment Testing
America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2570-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: PLU 15 TWR

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

Authorized for release by:

7/25/2022 10:33:12 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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results through



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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 15 TWR

Laboratory Job ID: 890-2570-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Qualifiers

GC 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.

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD 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.
α	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 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Job ID: 890-2570-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2570-1****Receipt**

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30208 and analytical batch 880-30191 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: PH02 (890-2570-1). 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: PH02 (890-2570-1). 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

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-30080/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30080 and analytical batch 880-30146 was outside the upper control limits.

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-30080 and analytical batch 880-30146 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Client Sample ID: PH02

Lab Sample ID: 890-2570-1

Date Collected: 07/15/22 09:00

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00328		0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:56	1
Toluene	0.102		0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:56	1
Ethylbenzene	0.0307		0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:56	1
m-Xylene & p-Xylene	17.4		0.398	mg/Kg		07/23/22 18:30	07/24/22 17:14	100
o-Xylene	8.45		0.199	mg/Kg		07/23/22 18:30	07/24/22 17:14	100
Xylenes, Total	25.9		0.398	mg/Kg		07/23/22 18:30	07/24/22 17:14	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	614	S1+	70 - 130	07/21/22 09:25	07/21/22 12:56	1
1,4-Difluorobenzene (Surr)	108		70 - 130	07/21/22 09:25	07/21/22 12:56	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	26.0		0.398	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	5530		50.0	mg/Kg			07/21/22 12:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1110	*1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 23:03	1
Diesel Range Organics (Over C10-C28)	3710	*1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 23:03	1
Oil Range Organics (Over C28-C36)	707		50.0	mg/Kg		07/19/22 16:15	07/20/22 23:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130	07/19/22 16:15	07/20/22 23:03	1
o-Terphenyl	110		70 - 130	07/19/22 16:15	07/20/22 23:03	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	80.5		4.98	mg/Kg			07/22/22 09:54	1

Client Sample ID: PH02A

Lab Sample ID: 890-2570-2

Date Collected: 07/15/22 10:40

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 16:13	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 16:13	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 16:13	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/23/22 18:30	07/24/22 16:13	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 16:13	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/23/22 18:30	07/24/22 16:13	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Client Sample ID: PH02A

Lab Sample ID: 890-2570-2

Date Collected: 07/15/22 10:40

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	07/23/22 18:30	07/24/22 16:13	1
1,4-Difluorobenzene (Surr)	93		70 - 130	07/23/22 18:30	07/24/22 16:13	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 12:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 23:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1 *+	50.0	mg/Kg		07/19/22 16:15	07/20/22 23:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 23:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130			07/19/22 16:15	07/20/22 23:23	1
o-Terphenyl	109		70 - 130			07/19/22 16:15	07/20/22 23:23	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22.8		4.97	mg/Kg			07/22/22 10:04	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-17264-A-22-C MS	Matrix Spike	100	88
880-17264-A-22-D MSD	Matrix Spike Duplicate	101	96
890-2566-A-1-G MS	Matrix Spike	83	100
890-2566-A-1-H MSD	Matrix Spike Duplicate	109	99
890-2570-1	PH02	614 S1+	108
890-2570-2	PH02A	109	93
LCS 880-30208/1-A	Lab Control Sample	96	97
LCS 880-30478/1-A	Lab Control Sample	106	98
LCSD 880-30208/2-A	Lab Control Sample Dup	109	92
LCSD 880-30478/2-A	Lab Control Sample Dup	105	97
MB 880-30208/5-A	Method Blank	79	95
MB 880-30478/5-A	Method Blank	98	86
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17086-A-11-C MS	Matrix Spike	87	85
880-17086-A-11-D MSD	Matrix Spike Duplicate	88	87
890-2570-1	PH02	118	110
890-2570-2	PH02A	94	109
LCS 880-30080/2-A	Lab Control Sample	150 S1+	149 S1+
LCSD 880-30080/3-A	Lab Control Sample Dup	114	115
MB 880-30080/1-A	Method Blank	141 S1+	168 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30208/5-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30208

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 12:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	07/21/22 09:25	07/21/22 12:04	1

Lab Sample ID: LCS 880-30208/1-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09280		mg/Kg		93	70 - 130
Toluene	0.100	0.09172		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09500		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1827		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09784		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-30208/2-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09320		mg/Kg		93	70 - 130	0	35
Toluene	0.100	0.09504		mg/Kg		95	70 - 130	4	35
Ethylbenzene	0.100	0.09691		mg/Kg		97	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1873		mg/Kg		94	70 - 130	2	35
o-Xylene	0.100	0.1033		mg/Kg		103	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0535		0.0998	0.07076	F1	mg/Kg		17	70 - 130
Toluene	0.0607		0.0998	0.06762	F1	mg/Kg		7	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

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

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.191		0.0998	0.07426	F1	mg/Kg		-117	70 - 130
m-Xylene & p-Xylene	0.0103		0.200	0.1436	F1	mg/Kg		67	70 - 130
o-Xylene	0.0397		0.0998	0.07377	F1	mg/Kg		34	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-2566-A-1-H MSD

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0535		0.0994	0.08725	F1	mg/Kg		34	70 - 130	21	35
Toluene	0.0607		0.0994	0.08422	F1	mg/Kg		24	70 - 130	22	35
Ethylbenzene	0.191		0.0994	0.08803	F1	mg/Kg		-104	70 - 130	17	35
m-Xylene & p-Xylene	0.0103		0.199	0.1708		mg/Kg		81	70 - 130	17	35
o-Xylene	0.0397		0.0994	0.09152	F1	mg/Kg		52	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: MB 880-30478/5-A

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30478

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 14:29	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 14:29	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 14:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/23/22 18:30	07/24/22 14:29	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/23/22 18:30	07/24/22 14:29	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/23/22 18:30	07/24/22 14:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130	07/23/22 18:30	07/24/22 14:29	1
1,4-Difluorobenzene (Surr)	86		70 - 130	07/23/22 18:30	07/24/22 14:29	1

Lab Sample ID: LCS 880-30478/1-A

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30478

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1098		mg/Kg		110	70 - 130
Toluene	0.100	0.1086		mg/Kg		109	70 - 130
Ethylbenzene	0.100	0.1126		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	0.200	0.2291		mg/Kg		115	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30478/1-A

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30478

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.1252		mg/Kg		125	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 880-30478/2-A

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30478

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1024		mg/Kg		102	70 - 130	7	35
Toluene	0.100	0.1005		mg/Kg		101	70 - 130	8	35
Ethylbenzene	0.100	0.1036		mg/Kg		104	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2101		mg/Kg		105	70 - 130	9	35
o-Xylene	0.100	0.1148		mg/Kg		115	70 - 130	9	35

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

Lab Sample ID: 880-17264-A-22-C MS

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30478

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.100	0.07613		mg/Kg		76	70 - 130
Toluene	<0.00200	U	0.100	0.08980		mg/Kg		89	70 - 130
Ethylbenzene	<0.00200	U	0.100	0.09841		mg/Kg		98	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.201	0.1966		mg/Kg		98	70 - 130
o-Xylene	<0.00200	U	0.100	0.1051		mg/Kg		105	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: 880-17264-A-22-D MSD

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30478

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0998	0.09261		mg/Kg		93	70 - 130	20	35
Toluene	<0.00200	U	0.0998	0.09185		mg/Kg		92	70 - 130	2	35
Ethylbenzene	<0.00200	U	0.0998	0.09454		mg/Kg		95	70 - 130	4	35
m-Xylene & p-Xylene	<0.00399	U	0.200	0.1915		mg/Kg		96	70 - 130	3	35
o-Xylene	<0.00200	U	0.0998	0.1034		mg/Kg		104	70 - 130	2	35

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

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

Lab Sample ID: 880-17264-A-22-D MSD

Matrix: Solid

Analysis Batch: 30484

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30478

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-30080/1-A

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30080

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 15:46	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 15:46	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/19/22 16:15	07/20/22 15:46	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
1-Chlorooctane	141	S1+	70 - 130			07/19/22 16:15	07/20/22 15:46	1	
o-Terphenyl	168	S1+	70 - 130			07/19/22 16:15	07/20/22 15:46	1	

Lab Sample ID: LCS 880-30080/2-A

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30080

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	1334	*+	mg/Kg		133	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	1530	*+	mg/Kg		153	70 - 130		
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	150	S1+	70 - 130						
o-Terphenyl	149	S1+	70 - 130						

Lab Sample ID: LCSD 880-30080/3-A

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30080

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1032	*1	mg/Kg		103	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	1000	1144	*1	mg/Kg		114	70 - 130	29	20
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	114		70 - 130						
o-Terphenyl	115		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

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

Lab Sample ID: 880-17086-A-11-C MS

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30080

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1 *+	1000	983.6		mg/Kg		96	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U *1 *+	1000	843.1		mg/Kg		84	70 - 130		

Lab Sample ID: 880-17086-A-11-D MSD

Matrix: Solid

Analysis Batch: 30146

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30080

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	989.4		mg/Kg		97	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1 *+	999	863.0		mg/Kg		86	70 - 130	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	88		70 - 130								
o-Terphenyl	87		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2569-A-1-B MS							Client Sample ID: Matrix Spike				
Matrix: Solid							Prep Type: Soluble				
Analysis Batch: 30226											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	101		250	370.4		mg/Kg		108	90 - 110		

Lab Sample ID: 890-2569-A-1-C MSD							Client Sample ID: Matrix Spike Duplicate				
Matrix: Solid							Prep Type: Soluble				
Analysis Batch: 30226											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	101		250	371.7		mg/Kg		108	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	8021B	30208
MB 880-30208/5-A	Method Blank	Total/NA	Solid	8021B	30208
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	8021B	30208
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30208
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	30208
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30208

Prep Batch: 30208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	5035	
MB 880-30208/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	Total BTEX	
890-2570-2	PH02A	Total/NA	Solid	Total BTEX	

Prep Batch: 30478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	5035	
890-2570-2	PH02A	Total/NA	Solid	5035	
MB 880-30478/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30478/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30478/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17264-A-22-C MS	Matrix Spike	Total/NA	Solid	5035	
880-17264-A-22-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	8021B	30478
890-2570-2	PH02A	Total/NA	Solid	8021B	30478
MB 880-30478/5-A	Method Blank	Total/NA	Solid	8021B	30478
LCS 880-30478/1-A	Lab Control Sample	Total/NA	Solid	8021B	30478
LCSD 880-30478/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30478
880-17264-A-22-C MS	Matrix Spike	Total/NA	Solid	8021B	30478
880-17264-A-22-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30478

GC Semi VOA

Prep Batch: 30080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	8015NM Prep	
890-2570-2	PH02A	Total/NA	Solid	8015NM Prep	
MB 880-30080/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30080/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30080/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17086-A-11-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

GC Semi VOA (Continued)

Prep Batch: 30080 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-17086-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	8015B NM	30080
890-2570-2	PH02A	Total/NA	Solid	8015B NM	30080
MB 880-30080/1-A	Method Blank	Total/NA	Solid	8015B NM	30080
LCS 880-30080/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30080
LCSD 880-30080/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30080
880-17086-A-11-C MS	Matrix Spike	Total/NA	Solid	8015B NM	30080
880-17086-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30080

Analysis Batch: 30255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Total/NA	Solid	8015 NM	
890-2570-2	PH02A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Soluble	Solid	DI Leach	
890-2570-2	PH02A	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2569-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2569-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2570-1	PH02	Soluble	Solid	300.0	30059
890-2570-2	PH02A	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2569-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30059
890-2569-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30059

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Client Sample ID: PH02

Lab Sample ID: 890-2570-1

Date Collected: 07/15/22 09:00

Matrix: Solid

Date Received: 07/18/22 12:12

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	30478	07/23/22 18:30	MR	XEN MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	30484	07/24/22 17:14	MR	XEN MID
Total/NA	Prep	5035			4.99 g	5 mL	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 12:56	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30438	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30255	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30080	07/19/22 16:15	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30146	07/20/22 23:03	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 09:54	SMC	XEN MID

Client Sample ID: PH02A

Lab Sample ID: 890-2570-2

Date Collected: 07/15/22 10:40

Matrix: Solid

Date Received: 07/18/22 12:12

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	30478	07/23/22 18:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30484	07/24/22 16:13	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30438	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30255	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30080	07/19/22 16:15	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30146	07/20/22 23:23	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 10:04	SMC	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2570-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2570-1	PH02	Solid	07/15/22 09:00	07/18/22 12:12	1'
890-2570-2	PH02A	Solid	07/15/22 10:40	07/18/22 12:12	3'

- 1
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- 12
- 13
- 14



Environment Testing
Xenco

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) 986-3199

Chain of Custody

Work Order No: _____

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Project Manager:	Ben Bell	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	988540852	Email:	bbell@ensolum.com

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 15 TWR	Turn Around	☒ Routine ☐ Rush	Pres. Code		ANALYSIS REQUEST		Preservative Codes	
Project Number:	03E1558015	Due Date:						None: NO DI Water: H ₂ O	
Project Location:	EDDY COUNTY, NM	TAT starts the day received by the lab, if received by 4:30pm						Cool: Cool MeOH: Me	
Sampler's Name:	Conner Shore							HCL: HC HNO ₃ : HN	
PO #:								H ₂ SO ₄ : H ₂ NaOH: Na	
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Thermometer ID: <u>110-007</u>	Wafer: ☒ Yes ☒ No						H ₂ PO ₄ : HP
Samples Received In-lab:	☒ Yes ☒ No	Correction Factor: <u>-0.02</u>							NaHSO ₄ : NABIS
Cooler Custody Seals:	☒ Yes ☒ No	Temperature Reading: <u>5.8</u>							Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals:	☒ Yes ☒ No	Corrected Temperature: <u>5.8</u>							Zn Acetate+NaOH: Zn
Total Containers:								NaOH+Ascorbic Acid: SAPC	
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Cont	# of Cont	CHLORIDES (EPA: 300.0)		
	PH02	7/15/2022	900	4'	Comp	1	TPH (8015)		
	PH02A	7/15/2022	1040	3'	Comp	1	BTEX (8021)		
	PH02B	7/15/2022	1045	4'	Comp	1			
								*HOLD Pending 3' sample	
								Cost Center: 2027711001	
								Incident Numbers: NAPP2205638843, NAPP2207746719	

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 SiO₂ Na Sr Ti 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 Ti 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
		7/18/22 1213			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2570-1

SDG Number: 03E1558015

Login Number: 2570

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: 890-2570-1

SDG Number: 03E1558015

Login Number: 2570

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/19/22 11:13 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	



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2571-1
Laboratory Sample Delivery Group: 03E1558015
Client Project/Site: PLU 15 TWR
Revision: 1

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

Attn: Ben Belill

Authorized for release by:
8/1/2022 10:58:24 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS

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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 15 TWR

Laboratory Job ID: 890-2571-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Job ID: 890-2571-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-2571-1

REVISION

The report being provided is a revision of the original report sent on 7/25/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re runs on all samples.

Report revision history

Receipt

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30208 and analytical batch 880-30191 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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.

GC Semi VOA

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-30992 and analytical batch 880-31051 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Client Sample ID: PH03

Lab Sample ID: 890-2571-1

Date Collected: 07/15/22 12:10

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 13:49	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 13:49	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 13:49	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/21/22 09:25	07/21/22 13:49	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 13:49	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/21/22 09:25	07/21/22 13:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	07/21/22 09:25	07/21/22 13:49	1
1,4-Difluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 13:49	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 12:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/29/22 11:03	07/30/22 18:25	1
Diesel Range Organics (Over C10-C28)	<49.9	U *	49.9	mg/Kg		07/29/22 11:03	07/30/22 18:25	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/29/22 11:03	07/30/22 18:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130	07/29/22 11:03	07/30/22 18:25	1
o-Terphenyl	97		70 - 130	07/29/22 11:03	07/30/22 18:25	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.55		5.00	mg/Kg			07/22/22 10:13	1

Client Sample ID: PH03A

Lab Sample ID: 890-2571-2

Date Collected: 07/15/22 12:15

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 14:15	1
Toluene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 14:15	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 14:15	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		07/21/22 09:25	07/21/22 14:15	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 14:15	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		07/21/22 09:25	07/21/22 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	07/21/22 09:25	07/21/22 14:15	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Client Sample ID: PH03A

Lab Sample ID: 890-2571-2

Date Collected: 07/15/22 12:15

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	91		70 - 130	07/21/22 09:25	07/21/22 14:15	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 12:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/29/22 11:03	07/30/22 18:46	1
Diesel Range Organics (Over C10-C28)	<49.9	U *	49.9	mg/Kg		07/29/22 11:03	07/30/22 18:46	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/29/22 11:03	07/30/22 18:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			07/29/22 11:03	07/30/22 18:46	1
o-Terphenyl	128		70 - 130			07/29/22 11:03	07/30/22 18:46	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32.0		4.95	mg/Kg			07/22/22 10:40	1

Client Sample ID: PH03B

Lab Sample ID: 890-2571-3

Date Collected: 07/15/22 12:25

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 14:41	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 14:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 14:41	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/21/22 09:25	07/21/22 14:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 14:41	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/21/22 09:25	07/21/22 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	07/21/22 09:25	07/21/22 14:41	1
1,4-Difluorobenzene (Surr)	98		70 - 130	07/21/22 09:25	07/21/22 14:41	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 12:58	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Client Sample ID: PH03B

Lab Sample ID: 890-2571-3

Date Collected: 07/15/22 12:25

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/29/22 11:03	07/30/22 19:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U *+	50.0	mg/Kg		07/29/22 11:03	07/30/22 19:08	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/29/22 11:03	07/30/22 19:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130			07/29/22 11:03	07/30/22 19:08	1
o-Terphenyl	120		70 - 130			07/29/22 11:03	07/30/22 19:08	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	154		5.05	mg/Kg			07/22/22 10:50	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

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)
890-2566-A-1-G MS	Matrix Spike	83	100
890-2566-A-1-H MSD	Matrix Spike Duplicate	109	99
890-2571-1	PH03	86	79
890-2571-2	PH03A	106	91
890-2571-3	PH03B	101	98
LCS 880-30208/1-A	Lab Control Sample	96	97
LCSD 880-30208/2-A	Lab Control Sample Dup	109	92
MB 880-30208/5-A	Method Blank	79	95

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)
890-2571-1	PH03	77	97
890-2571-2	PH03A	97	128
890-2571-3	PH03B	95	120
890-2663-A-1-B MS	Matrix Spike	81	93
890-2663-A-1-C MSD	Matrix Spike Duplicate	85	98
LCS 880-30992/2-A	Lab Control Sample	115	110
LCSD 880-30992/3-A	Lab Control Sample Dup	118	117
MB 880-30992/1-A	Method Blank	101	115

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30208/5-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30208

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 12:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	07/21/22 09:25	07/21/22 12:04	1

Lab Sample ID: LCS 880-30208/1-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09280		mg/Kg		93	70 - 130
Toluene	0.100	0.09172		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09500		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1827		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09784		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-30208/2-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09320		mg/Kg		93	70 - 130	0	35
Toluene	0.100	0.09504		mg/Kg		95	70 - 130	4	35
Ethylbenzene	0.100	0.09691		mg/Kg		97	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1873		mg/Kg		94	70 - 130	2	35
o-Xylene	0.100	0.1033		mg/Kg		103	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0535		0.0998	0.07076	F1	mg/Kg		17	70 - 130
Toluene	0.0607		0.0998	0.06762	F1	mg/Kg		7	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

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

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.191		0.0998	0.07426	F1	mg/Kg		-117	70 - 130
m-Xylene & p-Xylene	0.0103		0.200	0.1436	F1	mg/Kg		67	70 - 130
o-Xylene	0.0397		0.0998	0.07377	F1	mg/Kg		34	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-2566-A-1-H MSD

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.0535		0.0994	0.08725	F1	mg/Kg		34	70 - 130	21	35
Toluene	0.0607		0.0994	0.08422	F1	mg/Kg		24	70 - 130	22	35
Ethylbenzene	0.191		0.0994	0.08803	F1	mg/Kg		-104	70 - 130	17	35
m-Xylene & p-Xylene	0.0103		0.199	0.1708		mg/Kg		81	70 - 130	17	35
o-Xylene	0.0397		0.0994	0.09152	F1	mg/Kg		52	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-30992/1-A

Matrix: Solid

Analysis Batch: 31051

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30992

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/29/22 11:03	07/30/22 10:06	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/29/22 11:03	07/30/22 10:06	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/29/22 11:03	07/30/22 10:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130	07/29/22 11:03	07/30/22 10:06	1
o-Terphenyl	115		70 - 130	07/29/22 11:03	07/30/22 10:06	1

Lab Sample ID: LCS 880-30992/2-A

Matrix: Solid

Analysis Batch: 31051

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1068		mg/Kg		107	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1467	*+	mg/Kg		147	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30992/2-A

Matrix: Solid

Analysis Batch: 31051

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30992

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: LCSD 880-30992/3-A

Matrix: Solid

Analysis Batch: 31051

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30992

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1074		mg/Kg		107	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1000	1539	*+	mg/Kg		154	70 - 130	5	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	117		70 - 130

Lab Sample ID: 890-2663-A-1-B MS

Matrix: Solid

Analysis Batch: 31051

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	701.4		mg/Kg		70	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U *+	999	868.3		mg/Kg		85	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	93		70 - 130

Lab Sample ID: 890-2663-A-1-C MSD

Matrix: Solid

Analysis Batch: 31051

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30992

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	732.4		mg/Kg		73	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<49.9	U *+	999	919.9		mg/Kg		90	70 - 130	6	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	98		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 890-2569-A-1-B MS

Matrix: Solid

Analysis Batch: 30226

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	101		250	370.4		mg/Kg		108	90 - 110

Lab Sample ID: 890-2569-A-1-C MSD

Matrix: Solid

Analysis Batch: 30226

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	101		250	371.7		mg/Kg		108	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Total/NA	Solid	8021B	30208
890-2571-2	PH03A	Total/NA	Solid	8021B	30208
890-2571-3	PH03B	Total/NA	Solid	8021B	30208
MB 880-30208/5-A	Method Blank	Total/NA	Solid	8021B	30208
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	8021B	30208
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30208
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	30208
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30208

Prep Batch: 30208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Total/NA	Solid	5035	
890-2571-2	PH03A	Total/NA	Solid	5035	
890-2571-3	PH03B	Total/NA	Solid	5035	
MB 880-30208/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Total/NA	Solid	Total BTEX	
890-2571-2	PH03A	Total/NA	Solid	Total BTEX	
890-2571-3	PH03B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Total/NA	Solid	8015 NM	
890-2571-2	PH03A	Total/NA	Solid	8015 NM	
890-2571-3	PH03B	Total/NA	Solid	8015 NM	

Prep Batch: 30992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Total/NA	Solid	8015NM Prep	
890-2571-2	PH03A	Total/NA	Solid	8015NM Prep	
890-2571-3	PH03B	Total/NA	Solid	8015NM Prep	
MB 880-30992/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30992/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30992/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2663-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2663-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Total/NA	Solid	8015B NM	30992
890-2571-2	PH03A	Total/NA	Solid	8015B NM	30992
890-2571-3	PH03B	Total/NA	Solid	8015B NM	30992
MB 880-30992/1-A	Method Blank	Total/NA	Solid	8015B NM	30992

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

GC Semi VOA (Continued)

Analysis Batch: 31051 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-30992/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30992
LCSD 880-30992/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30992
890-2663-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	30992
890-2663-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30992

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Soluble	Solid	DI Leach	
890-2571-2	PH03A	Soluble	Solid	DI Leach	
890-2571-3	PH03B	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2569-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2569-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2571-1	PH03	Soluble	Solid	300.0	30059
890-2571-2	PH03A	Soluble	Solid	300.0	30059
890-2571-3	PH03B	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2569-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30059
890-2569-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30059

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Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Client Sample ID: PH03

Lab Sample ID: 890-2571-1

Date Collected: 07/15/22 12:10

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 13:49	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30439	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30256	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30992	07/29/22 11:03	DM	XEN MID
Total/NA	Analysis	8015B NM		1			31051	07/30/22 18:25	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 10:13	SMC	XEN MID

Client Sample ID: PH03A

Lab Sample ID: 890-2571-2

Date Collected: 07/15/22 12:15

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 14:15	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30439	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30256	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30992	07/29/22 11:03	DM	XEN MID
Total/NA	Analysis	8015B NM		1			31051	07/30/22 18:46	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 10:40	SMC	XEN MID

Client Sample ID: PH03B

Lab Sample ID: 890-2571-3

Date Collected: 07/15/22 12:25

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 14:41	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30439	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30256	07/21/22 12:58	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30992	07/29/22 11:03	DM	XEN MID
Total/NA	Analysis	8015B NM		1			31051	07/30/22 19:08	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 10:50	SMC	XEN MID

Laboratory References:

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

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Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

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 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2571-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2571-1	PH03	Solid	07/15/22 12:10	07/18/22 12:12	0.5'
890-2571-2	PH03A	Solid	07/15/22 12:15	07/18/22 12:12	1'
890-2571-3	PH03B	Solid	07/15/22 12:25	07/18/22 12:12	3'

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Environment Testing
Xenoco

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

Chain of Custody

Work Order No:

www.xenco.com Page 1 of 1

Project Manager:		Ben Bellill	Bill to: (if different)	Garrett Green
Company Name:		Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:		3122 National parks Hwy		
City, State ZIP:		Carlsbad, NM 88220	Address:	3104 E. Green Street
Phone:		9898540852	City, State ZIP:	Carlsbad, NM 88220
		Email:	bbellill@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:	

[illegible]

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 Ti 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 Ti 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				
CS	Amanda Stuf	7/16/22 12:22							
3			4						
5			6						

Revised Date: 08/25/2020 Rev: 2020

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2571-1

SDG Number: 03E1558015

Login Number: 2571**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: 890-2571-1

SDG Number: 03E1558015

Login Number: 2571**List Number: 2****Creator: Rodriguez, Leticia****List Source: Eurofins Midland****List Creation: 07/19/22 11:13 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	



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2572-1
Laboratory Sample Delivery Group: 03E1558015
Client Project/Site: PLU 15 TWR

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

Attn: Ben Belill

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:
7/25/2022 8:03:30 AM

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

LINKS

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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 15 TWR

Laboratory Job ID: 890-2572-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD 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.
α	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 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Job ID: 890-2572-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2572-1****Receipt**

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30208 and analytical batch 880-30191 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30164 and analytical batch 880-30098 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30164 and analytical batch 880-30098 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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

Method 300_ORGFM_28D: PH04 (890-2572-1) The matrix spike duplicate (MSD) recoveries for preparation batch 880-30059 and analytical batch 880-30226 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Client Sample ID: PH04

Lab Sample ID: 890-2572-1

Date Collected: 07/15/22 12:35

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 15:07	1
Toluene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 15:07	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 15:07	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		07/21/22 09:25	07/21/22 15:07	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 15:07	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		07/21/22 09:25	07/21/22 15:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	07/21/22 09:25	07/21/22 15:07	1
1,4-Difluorobenzene (Surr)	101		70 - 130	07/21/22 09:25	07/21/22 15:07	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 00:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 00:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 00:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130	07/20/22 15:31	07/21/22 00:15	1
o-Terphenyl	106		70 - 130	07/20/22 15:31	07/21/22 00:15	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.99	U	4.99	mg/Kg			07/22/22 10:59	1

Client Sample ID: PH04A

Lab Sample ID: 890-2572-2

Date Collected: 07/15/22 12:45

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 2'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:33	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		07/21/22 09:25	07/21/22 15:33	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:33	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		07/21/22 09:25	07/21/22 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	07/21/22 09:25	07/21/22 15:33	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Client Sample ID: PH04A

Lab Sample ID: 890-2572-2

Date Collected: 07/15/22 12:45

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	94		70 - 130	07/21/22 09:25	07/21/22 15:33	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 00:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 00:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 00:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			07/20/22 15:31	07/21/22 00:36	1
o-Terphenyl	109		70 - 130			07/20/22 15:31	07/21/22 00:36	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29.0		5.04	mg/Kg			07/22/22 11:08	1

Client Sample ID: PH04B

Lab Sample ID: 890-2572-3

Date Collected: 07/15/22 12:50

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:59	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/21/22 09:25	07/21/22 15:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 15:59	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/21/22 09:25	07/21/22 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	07/21/22 09:25	07/21/22 15:59	1
1,4-Difluorobenzene (Surr)	90		70 - 130	07/21/22 09:25	07/21/22 15:59	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Client Sample ID: PH04B

Lab Sample ID: 890-2572-3

Date Collected: 07/15/22 12:50

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 00:57	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 00:57	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 00:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130			07/20/22 15:31	07/21/22 00:57	1
o-Terphenyl	100		70 - 130			07/20/22 15:31	07/21/22 00:57	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.9		4.98	mg/Kg			07/22/22 11:18	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

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)
890-2566-A-1-G MS	Matrix Spike	83	100
890-2566-A-1-H MSD	Matrix Spike Duplicate	109	99
890-2572-1	PH04	115	101
890-2572-2	PH04A	112	94
890-2572-3	PH04B	107	90
LCS 880-30208/1-A	Lab Control Sample	96	97
LCSD 880-30208/2-A	Lab Control Sample Dup	109	92
MB 880-30208/5-A	Method Blank	79	95
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17129-A-13-E MS	Matrix Spike	82	85
880-17129-A-13-F MSD	Matrix Spike Duplicate	81	85
890-2572-1	PH04	99	106
890-2572-2	PH04A	100	109
890-2572-3	PH04B	93	100
LCS 880-30164/2-A	Lab Control Sample	102	114
MB 880-30164/1-A	Method Blank	137 S1+	153 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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	OTPH1
LCSD 880-30164/3-A	Lab Control Sample Dup		
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30208/5-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30208

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 12:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	07/21/22 09:25	07/21/22 12:04	1

Lab Sample ID: LCS 880-30208/1-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09280		mg/Kg		93	70 - 130
Toluene	0.100	0.09172		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09500		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1827		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09784		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-30208/2-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09320		mg/Kg		93	70 - 130	0	35
Toluene	0.100	0.09504		mg/Kg		95	70 - 130	4	35
Ethylbenzene	0.100	0.09691		mg/Kg		97	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1873		mg/Kg		94	70 - 130	2	35
o-Xylene	0.100	0.1033		mg/Kg		103	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0535		0.0998	0.07076	F1	mg/Kg		17	70 - 130
Toluene	0.0607		0.0998	0.06762	F1	mg/Kg		7	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

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

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.191		0.0998	0.07426	F1	mg/Kg		-117	70 - 130
m-Xylene & p-Xylene	0.0103		0.200	0.1436	F1	mg/Kg		67	70 - 130
o-Xylene	0.0397		0.0998	0.07377	F1	mg/Kg		34	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-2566-A-1-H MSD

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0535		0.0994	0.08725	F1	mg/Kg		34	70 - 130	21	35
Toluene	0.0607		0.0994	0.08422	F1	mg/Kg		24	70 - 130	22	35
Ethylbenzene	0.191		0.0994	0.08803	F1	mg/Kg		-104	70 - 130	17	35
m-Xylene & p-Xylene	0.0103		0.199	0.1708		mg/Kg		81	70 - 130	17	35
o-Xylene	0.0397		0.0994	0.09152	F1	mg/Kg		52	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-30164/1-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30164

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1
o-Terphenyl	153	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1206		mg/Kg		121	70 - 130
Diesel Range Organics (Over C10-C28)	1000	882.5		mg/Kg		88	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-30164/3-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1236		mg/Kg					
Diesel Range Organics (Over C10-C28)	1000	871.6		mg/Kg					

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane			
o-Terphenyl			

Lab Sample ID: 880-17129-A-13-E MS

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	1016		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	868.3		mg/Kg		87	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 880-17129-A-13-F MSD

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30164

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 F2	999	1285	F2	mg/Kg		129	70 - 130	23	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	876.5		mg/Kg		88	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	85		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 890-2569-A-1-B MS

Matrix: Solid

Analysis Batch: 30226

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	101		250	370.4		mg/Kg		108	90 - 110

Lab Sample ID: 890-2569-A-1-C MSD

Matrix: Solid

Analysis Batch: 30226

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	101		250	371.7		mg/Kg		108	90 - 110	0	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Total/NA	Solid	8021B	30208
890-2572-2	PH04A	Total/NA	Solid	8021B	30208
890-2572-3	PH04B	Total/NA	Solid	8021B	30208
MB 880-30208/5-A	Method Blank	Total/NA	Solid	8021B	30208
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	8021B	30208
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30208
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	30208
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30208

Prep Batch: 30208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Total/NA	Solid	5035	
890-2572-2	PH04A	Total/NA	Solid	5035	
890-2572-3	PH04B	Total/NA	Solid	5035	
MB 880-30208/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Total/NA	Solid	Total BTEX	
890-2572-2	PH04A	Total/NA	Solid	Total BTEX	
890-2572-3	PH04B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Total/NA	Solid	8015B NM	30164
890-2572-2	PH04A	Total/NA	Solid	8015B NM	30164
890-2572-3	PH04B	Total/NA	Solid	8015B NM	30164
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015B NM	30164
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30164
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30164
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015B NM	30164
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30164

Prep Batch: 30164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Total/NA	Solid	8015NM Prep	
890-2572-2	PH04A	Total/NA	Solid	8015NM Prep	
890-2572-3	PH04B	Total/NA	Solid	8015NM Prep	
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

GC Semi VOA

Analysis Batch: 30272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Total/NA	Solid	8015 NM	
890-2572-2	PH04A	Total/NA	Solid	8015 NM	
890-2572-3	PH04B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Soluble	Solid	DI Leach	
890-2572-2	PH04A	Soluble	Solid	DI Leach	
890-2572-3	PH04B	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2569-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2569-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2572-1	PH04	Soluble	Solid	300.0	30059
890-2572-2	PH04A	Soluble	Solid	300.0	30059
890-2572-3	PH04B	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2569-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30059
890-2569-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30059

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Client Sample ID: PH04

Lab Sample ID: 890-2572-1

Date Collected: 07/15/22 12:35

Matrix: Solid

Date Received: 07/18/22 12:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 15:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30440	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30272	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 00:15	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 10:59	SMC	XEN MID

Client Sample ID: PH04A

Lab Sample ID: 890-2572-2

Date Collected: 07/15/22 12:45

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 15:33	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30440	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30272	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 00:36	SM	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 11:08	SMC	XEN MID

Client Sample ID: PH04B

Lab Sample ID: 890-2572-3

Date Collected: 07/15/22 12:50

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 15:59	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30440	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30272	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 00:57	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 11:18	SMC	XEN MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

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 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2572-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2572-1	PH04	Solid	07/15/22 12:35	07/18/22 12:12	0.5'
890-2572-2	PH04A	Solid	07/15/22 12:45	07/18/22 12:12	2'
890-2572-3	PH04B	Solid	07/15/22 12:50	07/18/22 12:12	3'



Environment Testing
Xenoco

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) 986-3199

Work Order No: _____

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Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	9898540852	Email:	bbelli@ensolum.com

Project Name:	PLU 15 TWR	Turn Around	☒ Routine ☐ Rush	Pres. Code
Project Number:	03E1558015	Due Date:		
Project Location:	EDDY COUNTY, NM	TAT starts the day received by the lab, if received by 4:30pm		
Sampler's Name:	Conner Shore			
PO #:				

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Samples Received In tact:	Yes ☒ No ☐	Thermometer ID:	T-107-87	
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:	-0.02	
Sample Custody Seals:	Yes ☒ No ☐	Temperature Reading:	6.0	
Total Containers:	Yes ☒ No ☐	Corrected Temperature:	5.8	



890-2572 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	ANALYSIS REQUEST															
							Parameters															
							CHLORIDES (EPA: 300.0)															
							TPH (8015)															
							BTEX (8021)															
PH04	S	7/15/2022	12:35	0.5	Grab/	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PH04A	S	7/15/2022	12:45	2'	Grab/	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PH04B	S	7/15/2022	12:50	3'	Grab/	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PH04C	S	7/15/2022	05:05	4'	Grab/	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
							*HOLD Pending 3' sample															
							Cost Center: 2027711001															
							Incident Numbers: nAPP2205638843, nAPP2207746719															

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 SiO₂ Na Sr Ti 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 Ti 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 Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenoco 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 Xenoco. A minimum charge of \$55.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenoco, 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 <i>C. Shore</i>	<i>Ben Belli</i>	7/15/22 12:12			
3					
5					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2572-1

SDG Number: 03E1558015

Login Number: 2572

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: 890-2572-1

SDG Number: 03E1558015

Login Number: 2572

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/19/22 11:13 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	



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2573-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: PLU 15 TWR

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

Authorized for release by:

7/25/2022 8:04:34 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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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 15 TWR

Laboratory Job ID: 890-2573-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD 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
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 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Job ID: 890-2573-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2573-1****Receipt**

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30208 and analytical batch 880-30191 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30164 and analytical batch 880-30098 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30164 and analytical batch 880-30098 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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

Method 300_ORGFM_28D: PH05A (890-2573-2), PH05B (890-2573-3) and (890-2573-A-1-C MSD) The matrix spike duplicate (MSD) recoveries for preparation batch 880-30059 and analytical batch 880-30226 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Client Sample ID: PH05

Lab Sample ID: 890-2573-1

Date Collected: 07/15/22 12:55

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 16:25	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 16:25	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 16:25	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/21/22 09:25	07/21/22 16:25	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 16:25	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/21/22 09:25	07/21/22 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	07/21/22 09:25	07/21/22 16:25	1
1,4-Difluorobenzene (Surr)	93		70 - 130	07/21/22 09:25	07/21/22 16:25	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 01:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 01:18	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 01:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130	07/20/22 15:31	07/21/22 01:18	1
o-Terphenyl	116		70 - 130	07/20/22 15:31	07/21/22 01:18	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.39	F1	4.97	mg/Kg			07/22/22 11:27	1

Client Sample ID: PH05A

Lab Sample ID: 890-2573-2

Date Collected: 07/15/22 13:05

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 2'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 18:37	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 18:37	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 18:37	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/21/22 09:25	07/21/22 18:37	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/21/22 09:25	07/21/22 18:37	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/21/22 09:25	07/21/22 18:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	07/21/22 09:25	07/21/22 18:37	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Client Sample ID: PH05A

Lab Sample ID: 890-2573-2

Date Collected: 07/15/22 13:05

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	94		70 - 130	07/21/22 09:25	07/21/22 18:37	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 01:39	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 01:39	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 01:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			07/20/22 15:31	07/21/22 01:39	1
o-Terphenyl	125		70 - 130			07/20/22 15:31	07/21/22 01:39	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	123		5.01	mg/Kg			07/22/22 11:54	1

Client Sample ID: PH05B

Lab Sample ID: 890-2573-3

Date Collected: 07/15/22 13:10

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 19:03	1
Toluene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 19:03	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 19:03	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		07/21/22 09:25	07/21/22 19:03	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 19:03	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		07/21/22 09:25	07/21/22 19:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	07/21/22 09:25	07/21/22 19:03	1
1,4-Difluorobenzene (Surr)	88		70 - 130	07/21/22 09:25	07/21/22 19:03	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 13:53	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Client Sample ID: PH05B

Lab Sample ID: 890-2573-3

Date Collected: 07/15/22 13:10

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 02:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 02:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 02:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130			07/20/22 15:31	07/21/22 02:00	1
o-Terphenyl	110		70 - 130			07/20/22 15:31	07/21/22 02:00	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	56.5		4.98	mg/Kg			07/22/22 12:04	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

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)
890-2566-A-1-G MS	Matrix Spike	83	100
890-2566-A-1-H MSD	Matrix Spike Duplicate	109	99
890-2573-1	PH05	112	93
890-2573-2	PH05A	109	94
890-2573-3	PH05B	94	88
LCS 880-30208/1-A	Lab Control Sample	96	97
LCSD 880-30208/2-A	Lab Control Sample Dup	109	92
MB 880-30208/5-A	Method Blank	79	95
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17129-A-13-E MS	Matrix Spike	82	85
880-17129-A-13-F MSD	Matrix Spike Duplicate	81	85
890-2573-1	PH05	105	116
890-2573-2	PH05A	115	125
890-2573-3	PH05B	101	110
LCS 880-30164/2-A	Lab Control Sample	102	114
MB 880-30164/1-A	Method Blank	137 S1+	153 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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	OTPH1
LCSD 880-30164/3-A	Lab Control Sample Dup		
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30208/5-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30208

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 12:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	07/21/22 09:25	07/21/22 12:04	1

Lab Sample ID: LCS 880-30208/1-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09280		mg/Kg		93	70 - 130
Toluene	0.100	0.09172		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09500		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1827		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09784		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-30208/2-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09320		mg/Kg		93	70 - 130	0	35
Toluene	0.100	0.09504		mg/Kg		95	70 - 130	4	35
Ethylbenzene	0.100	0.09691		mg/Kg		97	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1873		mg/Kg		94	70 - 130	2	35
o-Xylene	0.100	0.1033		mg/Kg		103	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0535		0.0998	0.07076	F1	mg/Kg		17	70 - 130
Toluene	0.0607		0.0998	0.06762	F1	mg/Kg		7	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

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

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.191		0.0998	0.07426	F1	mg/Kg		-117	70 - 130
m-Xylene & p-Xylene	0.0103		0.200	0.1436	F1	mg/Kg		67	70 - 130
o-Xylene	0.0397		0.0998	0.07377	F1	mg/Kg		34	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-2566-A-1-H MSD

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0535		0.0994	0.08725	F1	mg/Kg		34	70 - 130	21	35
Toluene	0.0607		0.0994	0.08422	F1	mg/Kg		24	70 - 130	22	35
Ethylbenzene	0.191		0.0994	0.08803	F1	mg/Kg		-104	70 - 130	17	35
m-Xylene & p-Xylene	0.0103		0.199	0.1708		mg/Kg		81	70 - 130	17	35
o-Xylene	0.0397		0.0994	0.09152	F1	mg/Kg		52	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-30164/1-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30164

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1
o-Terphenyl	153	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1206		mg/Kg		121	70 - 130
Diesel Range Organics (Over C10-C28)	1000	882.5		mg/Kg		88	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-30164/3-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1236		mg/Kg					
Diesel Range Organics (Over C10-C28)	1000	871.6		mg/Kg					

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane			
o-Terphenyl			

Lab Sample ID: 880-17129-A-13-E MS

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	1016		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	868.3		mg/Kg		87	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 880-17129-A-13-F MSD

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30164

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 F2	999	1285	F2	mg/Kg		129	70 - 130	23	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	876.5		mg/Kg		88	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	85		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 890-2573-1 MS

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: PH05

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.39	F1	249	277.7		mg/Kg		110	90 - 110

Lab Sample ID: 890-2573-1 MSD

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: PH05

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5.39	F1	249	280.4	F1	mg/Kg		111	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Total/NA	Solid	8021B	30208
890-2573-2	PH05A	Total/NA	Solid	8021B	30208
890-2573-3	PH05B	Total/NA	Solid	8021B	30208
MB 880-30208/5-A	Method Blank	Total/NA	Solid	8021B	30208
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	8021B	30208
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30208
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	30208
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30208

Prep Batch: 30208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Total/NA	Solid	5035	
890-2573-2	PH05A	Total/NA	Solid	5035	
890-2573-3	PH05B	Total/NA	Solid	5035	
MB 880-30208/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Total/NA	Solid	Total BTEX	
890-2573-2	PH05A	Total/NA	Solid	Total BTEX	
890-2573-3	PH05B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Total/NA	Solid	8015B NM	30164
890-2573-2	PH05A	Total/NA	Solid	8015B NM	30164
890-2573-3	PH05B	Total/NA	Solid	8015B NM	30164
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015B NM	30164
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30164
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30164
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015B NM	30164
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30164

Prep Batch: 30164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Total/NA	Solid	8015NM Prep	
890-2573-2	PH05A	Total/NA	Solid	8015NM Prep	
890-2573-3	PH05B	Total/NA	Solid	8015NM Prep	
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

GC Semi VOA

Analysis Batch: 30273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Total/NA	Solid	8015 NM	
890-2573-2	PH05A	Total/NA	Solid	8015 NM	
890-2573-3	PH05B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Soluble	Solid	DI Leach	
890-2573-2	PH05A	Soluble	Solid	DI Leach	
890-2573-3	PH05B	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2573-1 MS	PH05	Soluble	Solid	DI Leach	
890-2573-1 MSD	PH05	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2573-1	PH05	Soluble	Solid	300.0	30059
890-2573-2	PH05A	Soluble	Solid	300.0	30059
890-2573-3	PH05B	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2573-1 MS	PH05	Soluble	Solid	300.0	30059
890-2573-1 MSD	PH05	Soluble	Solid	300.0	30059

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Client Sample ID: PH05

Lab Sample ID: 890-2573-1

Date Collected: 07/15/22 12:55

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 16:25	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30441	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30273	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 01:18	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 11:27	SMC	XEN MID

Client Sample ID: PH05A

Lab Sample ID: 890-2573-2

Date Collected: 07/15/22 13:05

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 18:37	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30441	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30273	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 01:39	SM	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 11:54	SMC	XEN MID

Client Sample ID: PH05B

Lab Sample ID: 890-2573-3

Date Collected: 07/15/22 13:10

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 19:03	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30441	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30273	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 02:00	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 12:04	SMC	XEN MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

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 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2573-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2573-1	PH05	Solid	07/15/22 12:55	07/18/22 12:12	0.5'
890-2573-2	PH05A	Solid	07/15/22 13:05	07/18/22 12:12	2'
890-2573-3	PH05B	Solid	07/15/22 13:10	07/18/22 12:12	3'

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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

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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: _____	

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 Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed				TC1P / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti 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 		7/18/02 12:12							
3					4				
5					6				

Revised Date: 08/25/2020 Rev: 2020

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2573-1

SDG Number: 03E1558015

Login Number: 2573

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: 890-2573-1

SDG Number: 03E1558015

Login Number: 2573

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/19/22 11:13 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	



Environment Testing
America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2574-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: PLU 15 TWR

For:

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Attn: Ben Belill

Authorized for release by:

7/25/2022 8:04:33 AM

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

Client: Ensolum
Project/Site: PLU 15 TWR

Laboratory Job ID: 890-2574-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD 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
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 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Job ID: 890-2574-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2574-1****Receipt**

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30208 and analytical batch 880-30191 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30164 and analytical batch 880-30098 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30164 and analytical batch 880-30098 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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

Method 300_ORGFM_28D: PH06 (890-2574-1), PH06A (890-2574-2), PH06B (890-2574-3) and (890-2573-A-1-C MSD) The matrix spike duplicate (MSD) recoveries for preparation batch 880-30059 and 880-30059 and analytical batch 880-30226 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Client Sample ID: PH06

Lab Sample ID: 890-2574-1

Date Collected: 07/15/22 13:30

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:29	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:29	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:29	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		07/21/22 09:25	07/21/22 19:29	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:29	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		07/21/22 09:25	07/21/22 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	07/21/22 09:25	07/21/22 19:29	1
1,4-Difluorobenzene (Surr)	99		70 - 130	07/21/22 09:25	07/21/22 19:29	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 02:21	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 02:21	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 02:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	07/20/22 15:31	07/21/22 02:21	1
o-Terphenyl	112		70 - 130	07/20/22 15:31	07/21/22 02:21	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35.8		4.95	mg/Kg			07/22/22 12:40	1

Client Sample ID: PH06A

Lab Sample ID: 890-2574-2

Date Collected: 07/15/22 13:35

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:55	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:55	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/21/22 09:25	07/21/22 19:55	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 19:55	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/21/22 09:25	07/21/22 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130	07/21/22 09:25	07/21/22 19:55	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Client Sample ID: PH06A

Lab Sample ID: 890-2574-2

Date Collected: 07/15/22 13:35

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	92		70 - 130	07/21/22 09:25	07/21/22 19:55	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:02	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:02	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130			07/20/22 15:31	07/21/22 03:02	1
o-Terphenyl	128		70 - 130			07/20/22 15:31	07/21/22 03:02	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24.9		5.04	mg/Kg			07/22/22 13:36	1

Client Sample ID: PH06B

Lab Sample ID: 890-2574-3

Date Collected: 07/15/22 13:55

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000398	U	0.000398	mg/Kg		07/21/22 09:25	07/21/22 20:21	1
Toluene	<0.000398	U	0.000398	mg/Kg		07/21/22 09:25	07/21/22 20:21	1
Ethylbenzene	<0.000398	U	0.000398	mg/Kg		07/21/22 09:25	07/21/22 20:21	1
m-Xylene & p-Xylene	<0.000795	U	0.000795	mg/Kg		07/21/22 09:25	07/21/22 20:21	1
o-Xylene	<0.000398	U	0.000398	mg/Kg		07/21/22 09:25	07/21/22 20:21	1
Xylenes, Total	<0.000795	U	0.000795	mg/Kg		07/21/22 09:25	07/21/22 20:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	07/21/22 09:25	07/21/22 20:21	1
1,4-Difluorobenzene (Surr)	105		70 - 130	07/21/22 09:25	07/21/22 20:21	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.000795	U	0.000795	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Client Sample ID: PH06B

Lab Sample ID: 890-2574-3

Date Collected: 07/15/22 13:55

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:23	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:23	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			07/20/22 15:31	07/21/22 03:23	1
o-Terphenyl	113		70 - 130			07/20/22 15:31	07/21/22 03:23	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.8		4.95	mg/Kg			07/22/22 12:50	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

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)
890-2566-A-1-G MS	Matrix Spike	83	100
890-2566-A-1-H MSD	Matrix Spike Duplicate	109	99
890-2574-1	PH06	122	99
890-2574-2	PH06A	114	92
890-2574-3	PH06B	121	105
LCS 880-30208/1-A	Lab Control Sample	96	97
LCSD 880-30208/2-A	Lab Control Sample Dup	109	92
MB 880-30208/5-A	Method Blank	79	95
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17129-A-13-E MS	Matrix Spike	82	85
880-17129-A-13-F MSD	Matrix Spike Duplicate	81	85
890-2574-1	PH06	102	112
890-2574-2	PH06A	117	128
890-2574-3	PH06B	102	113
LCS 880-30164/2-A	Lab Control Sample	102	114
MB 880-30164/1-A	Method Blank	137 S1+	153 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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	OTPH1
LCSD 880-30164/3-A	Lab Control Sample Dup		
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30208/5-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30208

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 12:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	07/21/22 09:25	07/21/22 12:04	1

Lab Sample ID: LCS 880-30208/1-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09280		mg/Kg		93	70 - 130
Toluene	0.100	0.09172		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09500		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1827		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09784		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-30208/2-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09320		mg/Kg		93	70 - 130	0	35
Toluene	0.100	0.09504		mg/Kg		95	70 - 130	4	35
Ethylbenzene	0.100	0.09691		mg/Kg		97	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1873		mg/Kg		94	70 - 130	2	35
o-Xylene	0.100	0.1033		mg/Kg		103	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0535		0.0998	0.07076	F1	mg/Kg		17	70 - 130
Toluene	0.0607		0.0998	0.06762	F1	mg/Kg		7	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

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

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.191		0.0998	0.07426	F1	mg/Kg		-117	70 - 130
m-Xylene & p-Xylene	0.0103		0.200	0.1436	F1	mg/Kg		67	70 - 130
o-Xylene	0.0397		0.0998	0.07377	F1	mg/Kg		34	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-2566-A-1-H MSD

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0535		0.0994	0.08725	F1	mg/Kg		34	70 - 130	21	35
Toluene	0.0607		0.0994	0.08422	F1	mg/Kg		24	70 - 130	22	35
Ethylbenzene	0.191		0.0994	0.08803	F1	mg/Kg		-104	70 - 130	17	35
m-Xylene & p-Xylene	0.0103		0.199	0.1708		mg/Kg		81	70 - 130	17	35
o-Xylene	0.0397		0.0994	0.09152	F1	mg/Kg		52	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-30164/1-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30164

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1
o-Terphenyl	153	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1206		mg/Kg		121	70 - 130
Diesel Range Organics (Over C10-C28)	1000	882.5		mg/Kg		88	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-30164/3-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1236		mg/Kg					
Diesel Range Organics (Over C10-C28)	1000	871.6		mg/Kg					

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane			
o-Terphenyl			

Lab Sample ID: 880-17129-A-13-E MS

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	1016		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	868.3		mg/Kg		87	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 880-17129-A-13-F MSD

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30164

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 F2	999	1285	F2	mg/Kg		129	70 - 130	23	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	876.5		mg/Kg		88	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	85		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 890-2573-A-1-B MS

Matrix: Solid

Analysis Batch: 30226

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	5.39	F1	249	277.7		mg/Kg		110	90 - 110

Lab Sample ID: 890-2573-A-1-C MSD

Matrix: Solid

Analysis Batch: 30226

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	5.39	F1	249	280.4	F1	mg/Kg		111	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Total/NA	Solid	8021B	30208
890-2574-2	PH06A	Total/NA	Solid	8021B	30208
890-2574-3	PH06B	Total/NA	Solid	8021B	30208
MB 880-30208/5-A	Method Blank	Total/NA	Solid	8021B	30208
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	8021B	30208
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30208
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	30208
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30208

Prep Batch: 30208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Total/NA	Solid	5035	
890-2574-2	PH06A	Total/NA	Solid	5035	
890-2574-3	PH06B	Total/NA	Solid	5035	
MB 880-30208/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Total/NA	Solid	Total BTEX	
890-2574-2	PH06A	Total/NA	Solid	Total BTEX	
890-2574-3	PH06B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Total/NA	Solid	8015B NM	30164
890-2574-2	PH06A	Total/NA	Solid	8015B NM	30164
890-2574-3	PH06B	Total/NA	Solid	8015B NM	30164
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015B NM	30164
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30164
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30164
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015B NM	30164
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30164

Prep Batch: 30164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Total/NA	Solid	8015NM Prep	
890-2574-2	PH06A	Total/NA	Solid	8015NM Prep	
890-2574-3	PH06B	Total/NA	Solid	8015NM Prep	
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

GC Semi VOA

Analysis Batch: 30274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Total/NA	Solid	8015 NM	
890-2574-2	PH06A	Total/NA	Solid	8015 NM	
890-2574-3	PH06B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Soluble	Solid	DI Leach	
890-2574-2	PH06A	Soluble	Solid	DI Leach	
890-2574-3	PH06B	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2573-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2573-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2574-1	PH06	Soluble	Solid	300.0	30059
890-2574-2	PH06A	Soluble	Solid	300.0	30059
890-2574-3	PH06B	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2573-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30059
890-2573-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30059

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Client Sample ID: PH06

Lab Sample ID: 890-2574-1

Date Collected: 07/15/22 13:30

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 19:29	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30442	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30274	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 02:21	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 12:40	SMC	XEN MID

Client Sample ID: PH06A

Lab Sample ID: 890-2574-2

Date Collected: 07/15/22 13:35

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 19:55	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30442	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30274	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 03:02	SM	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 13:36	SMC	XEN MID

Client Sample ID: PH06B

Lab Sample ID: 890-2574-3

Date Collected: 07/15/22 13:55

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	1.0 mL	30191	07/21/22 20:21	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30442	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30274	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 03:23	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 12:50	SMC	XEN MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

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 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2574-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2574-1	PH06	Solid	07/15/22 13:30	07/18/22 12:12	0.5'
890-2574-2	PH06A	Solid	07/15/22 13:35	07/18/22 12:12	1'
890-2574-3	PH06B	Solid	07/15/22 13:55	07/18/22 12:12	3'

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- 11
- 12
- 13
- 14



Environment Testing
Xerco

Houston, TX (281) 240-4200, Dallas, TX (214) 962-0300
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

Chain of Custody

Work Order No:

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Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	3122 National parks Hwy	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	9898540852	Email:	bbelli@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:	

[illegible]

Total	200.7 / 6010	200.8 / 6020:
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 Ti U Hg: 1631 / 245.1 / 7470 / 7471
	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 Zr	

Notice: Signature of this document for fulfillment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 to be covered beyond the control of Eurofins Xeno, a minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, but not emplaced. 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 <i>[Signature]</i>	<i>[Signature]</i>	7/18/02 12:12			
3		4			
5		6			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2574-1

SDG Number: 03E1558015

Login Number: 2574

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: 890-2574-1

SDG Number: 03E1558015

Login Number: 2574

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/19/22 11:13 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	



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2575-1

Laboratory Sample Delivery Group: 03E1558015

Client Project/Site: PLU 15 TWR

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:

7/25/2022 8:04:33 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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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 15 TWR

Laboratory Job ID: 890-2575-1
SDG: 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD 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
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 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Job ID: 890-2575-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2575-1****Receipt**

The samples were received on 7/18/2022 12:12 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 5.8°C

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30208 and analytical batch 880-30191 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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.

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30164 and analytical batch 880-30098 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30164 and analytical batch 880-30098 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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

Method 300_ORGFM_28D: PH07 (890-2575-1), PH07A (890-2575-2), PH07B (890-2575-3) and (890-2573-A-1-C MSD) The matrix spike duplicate (MSD) recoveries for preparation batch 880-30059 and 880-30059 and analytical batch 880-30226 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Client Sample ID: PH07

Lab Sample ID: 890-2575-1

Date Collected: 07/15/22 14:40

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 20:47	1
Toluene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 20:47	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 20:47	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		07/21/22 09:25	07/21/22 20:47	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		07/21/22 09:25	07/21/22 20:47	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		07/21/22 09:25	07/21/22 20:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	07/21/22 09:25	07/21/22 20:47	1
1,4-Difluorobenzene (Surr)	96		70 - 130	07/21/22 09:25	07/21/22 20:47	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:44	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:44	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 03:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	07/20/22 15:31	07/21/22 03:44	1
o-Terphenyl	112		70 - 130	07/20/22 15:31	07/21/22 03:44	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24.3		5.00	mg/Kg			07/22/22 12:59	1

Client Sample ID: PH07A

Lab Sample ID: 890-2575-2

Date Collected: 07/15/22 14:45

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 21:12	1
Toluene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 21:12	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 21:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		07/21/22 09:25	07/21/22 21:12	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		07/21/22 09:25	07/21/22 21:12	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		07/21/22 09:25	07/21/22 21:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130	07/21/22 09:25	07/21/22 21:12	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Client Sample ID: PH07A

Lab Sample ID: 890-2575-2

Date Collected: 07/15/22 14:45

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 1'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	94		70 - 130	07/21/22 09:25	07/21/22 21:12	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/21/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 04:05	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 04:05	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/20/22 15:31	07/21/22 04:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130			07/20/22 15:31	07/21/22 04:05	1
o-Terphenyl	107		70 - 130			07/20/22 15:31	07/21/22 04:05	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	131		5.00	mg/Kg			07/22/22 13:08	1

Client Sample ID: PH07B

Lab Sample ID: 890-2575-3

Date Collected: 07/15/22 14:55

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 21:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 21:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 21:38	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		07/21/22 09:25	07/21/22 21:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 21:38	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		07/21/22 09:25	07/21/22 21:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	07/21/22 09:25	07/21/22 21:38	1
1,4-Difluorobenzene (Surr)	93		70 - 130	07/21/22 09:25	07/21/22 21:38	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/22/22 16:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/21/22 13:53	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Client Sample ID: PH07B

Lab Sample ID: 890-2575-3

Date Collected: 07/15/22 14:55

Matrix: Solid

Date Received: 07/18/22 12:12

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 04:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 04:26	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/21/22 04:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			07/20/22 15:31	07/21/22 04:26	1
o-Terphenyl	105		70 - 130			07/20/22 15:31	07/21/22 04:26	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	112		5.05	mg/Kg			07/22/22 13:18	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

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)
890-2566-A-1-G MS	Matrix Spike	83	100
890-2566-A-1-H MSD	Matrix Spike Duplicate	109	99
890-2575-1	PH07	122	96
890-2575-2	PH07A	118	94
890-2575-3	PH07B	124	93
LCS 880-30208/1-A	Lab Control Sample	96	97
LCSD 880-30208/2-A	Lab Control Sample Dup	109	92
MB 880-30208/5-A	Method Blank	79	95
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17129-A-13-E MS	Matrix Spike	82	85
880-17129-A-13-F MSD	Matrix Spike Duplicate	81	85
890-2575-1	PH07	102	112
890-2575-2	PH07A	98	107
890-2575-3	PH07B	97	105
LCS 880-30164/2-A	Lab Control Sample	102	114
MB 880-30164/1-A	Method Blank	137 S1+	153 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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	OTPH1
LCSD 880-30164/3-A	Lab Control Sample Dup		
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30208/5-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30208

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:25	07/21/22 12:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:25	07/21/22 12:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	07/21/22 09:25	07/21/22 12:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	07/21/22 09:25	07/21/22 12:04	1

Lab Sample ID: LCS 880-30208/1-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09280		mg/Kg		93	70 - 130
Toluene	0.100	0.09172		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09500		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1827		mg/Kg		91	70 - 130
o-Xylene	0.100	0.09784		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-30208/2-A

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09320		mg/Kg		93	70 - 130	0	35
Toluene	0.100	0.09504		mg/Kg		95	70 - 130	4	35
Ethylbenzene	0.100	0.09691		mg/Kg		97	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1873		mg/Kg		94	70 - 130	2	35
o-Xylene	0.100	0.1033		mg/Kg		103	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0535		0.0998	0.07076	F1	mg/Kg		17	70 - 130
Toluene	0.0607		0.0998	0.06762	F1	mg/Kg		7	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

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

Lab Sample ID: 890-2566-A-1-G MS

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.191		0.0998	0.07426	F1	mg/Kg		-117	70 - 130
m-Xylene & p-Xylene	0.0103		0.200	0.1436	F1	mg/Kg		67	70 - 130
o-Xylene	0.0397		0.0998	0.07377	F1	mg/Kg		34	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-2566-A-1-H MSD

Matrix: Solid

Analysis Batch: 30191

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30208

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0535		0.0994	0.08725	F1	mg/Kg		34	70 - 130	21	35
Toluene	0.0607		0.0994	0.08422	F1	mg/Kg		24	70 - 130	22	35
Ethylbenzene	0.191		0.0994	0.08803	F1	mg/Kg		-104	70 - 130	17	35
m-Xylene & p-Xylene	0.0103		0.199	0.1708		mg/Kg		81	70 - 130	17	35
o-Xylene	0.0397		0.0994	0.09152	F1	mg/Kg		52	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-30164/1-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30164

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/20/22 15:31	07/20/22 20:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1
o-Terphenyl	153	S1+	70 - 130	07/20/22 15:31	07/20/22 20:42	1

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1206		mg/Kg		121	70 - 130
Diesel Range Organics (Over C10-C28)	1000	882.5		mg/Kg		88	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

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

Lab Sample ID: LCS 880-30164/2-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30164

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-30164/3-A

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1236		mg/Kg					
Diesel Range Organics (Over C10-C28)	1000	871.6		mg/Kg					

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane			
o-Terphenyl			

Lab Sample ID: 880-17129-A-13-E MS

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	1016		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	868.3		mg/Kg		87	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 880-17129-A-13-F MSD

Matrix: Solid

Analysis Batch: 30098

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30164

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 F2	999	1285	F2	mg/Kg		129	70 - 130	23	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	876.5		mg/Kg		88	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	85		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30059/1-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 08:50	1

Lab Sample ID: LCS 880-30059/2-A

Matrix: Solid

Analysis Batch: 30226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.1		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-30059/3-A

Matrix: Solid

Analysis Batch: 30226

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	267.6		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 890-2573-A-1-B MS

Matrix: Solid

Analysis Batch: 30226

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	5.39	F1	249	277.7		mg/Kg		110	90 - 110

Lab Sample ID: 890-2573-A-1-C MSD

Matrix: Solid

Analysis Batch: 30226

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	5.39	F1	249	280.4	F1	mg/Kg		111	90 - 110	1	20

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

GC VOA

Analysis Batch: 30191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Total/NA	Solid	8021B	30208
890-2575-2	PH07A	Total/NA	Solid	8021B	30208
890-2575-3	PH07B	Total/NA	Solid	8021B	30208
MB 880-30208/5-A	Method Blank	Total/NA	Solid	8021B	30208
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	8021B	30208
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30208
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	30208
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30208

Prep Batch: 30208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Total/NA	Solid	5035	
890-2575-2	PH07A	Total/NA	Solid	5035	
890-2575-3	PH07B	Total/NA	Solid	5035	
MB 880-30208/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30208/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30208/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2566-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-2566-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Total/NA	Solid	Total BTEX	
890-2575-2	PH07A	Total/NA	Solid	Total BTEX	
890-2575-3	PH07B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Total/NA	Solid	8015B NM	30164
890-2575-2	PH07A	Total/NA	Solid	8015B NM	30164
890-2575-3	PH07B	Total/NA	Solid	8015B NM	30164
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015B NM	30164
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30164
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30164
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015B NM	30164
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30164

Prep Batch: 30164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Total/NA	Solid	8015NM Prep	
890-2575-2	PH07A	Total/NA	Solid	8015NM Prep	
890-2575-3	PH07B	Total/NA	Solid	8015NM Prep	
MB 880-30164/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30164/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30164/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17129-A-13-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17129-A-13-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

GC Semi VOA

Analysis Batch: 30275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Total/NA	Solid	8015 NM	
890-2575-2	PH07A	Total/NA	Solid	8015 NM	
890-2575-3	PH07B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Soluble	Solid	DI Leach	
890-2575-2	PH07A	Soluble	Solid	DI Leach	
890-2575-3	PH07B	Soluble	Solid	DI Leach	
MB 880-30059/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2573-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2573-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2575-1	PH07	Soluble	Solid	300.0	30059
890-2575-2	PH07A	Soluble	Solid	300.0	30059
890-2575-3	PH07B	Soluble	Solid	300.0	30059
MB 880-30059/1-A	Method Blank	Soluble	Solid	300.0	30059
LCS 880-30059/2-A	Lab Control Sample	Soluble	Solid	300.0	30059
LCSD 880-30059/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30059
890-2573-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30059
890-2573-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30059

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Client Sample ID: PH07

Lab Sample ID: 890-2575-1

Date Collected: 07/15/22 14:40

Matrix: Solid

Date Received: 07/18/22 12:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 20:47	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30443	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30275	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 03:44	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 12:59	SMC	XEN MID

Client Sample ID: PH07A

Lab Sample ID: 890-2575-2

Date Collected: 07/15/22 14:45

Matrix: Solid

Date Received: 07/18/22 12:12

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 21:12	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30443	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30275	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 04:05	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 13:08	SMC	XEN MID

Client Sample ID: PH07B

Lab Sample ID: 890-2575-3

Date Collected: 07/15/22 14:55

Matrix: Solid

Date Received: 07/18/22 12:12

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	30208	07/21/22 09:25	MR	XEN MID
Total/NA	Analysis	8021B		1			30191	07/21/22 21:38	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30443	07/22/22 16:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30275	07/21/22 13:53	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30164	07/20/22 15:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30098	07/21/22 04:26	SM	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	30059	07/19/22 11:04	CH	XEN MID
Soluble	Analysis	300.0		1			30226	07/22/22 13:18	SMC	XEN MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2575-1
SDG: 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2575-1	PH07	Solid	07/15/22 14:40	07/18/22 12:12	0.5'
890-2575-2	PH07A	Solid	07/15/22 14:45	07/18/22 12:12	1'
890-2575-3	PH07B	Solid	07/15/22 14:55	07/18/22 12:12	3'



Environment Testing
Xenco

Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440 San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1256
Hobbs, NM (575) 392-7550 Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	Ben Bellill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	3122 National Parks Hwy	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	9898540852	Email:	bbellill@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 15 TWR	Turn Around	☒ Routine ☐ Rush	Pres. Code		ANALYSIS REQUEST		Preservative Codes
Project Number:	03E1558015							None: NO DI Water: H ₂ O
Project Location:	EDDY COUNTY, NM	Due Date:						Cool: Cool MeOH: Me
Sampler's Name:	Conner Shore	TAT starts the day received by the lab, if received by 4:30pm						HCL: HC HNO ₃ : HN
PO #:								H ₂ SO ₄ : H ₂ NaOH: Na
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Well Ice: ☒ Yes ☒ No						H ₃ PO ₄ : HP
Samples Received Inact:	☒ Yes ☒ No	Thermometer ID:						NaHSO ₄ : NABIS
Cooler Custody Seals:	☒ Yes ☒ No	Correction Factor:						Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals:	☒ Yes ☒ No	Temperature Reading:						Zn Acetate+NaOH: Zn
Total Containers:		Corrected Temperature:						NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	ANALYSIS REQUEST	Preservative Codes	Sample Comments
CS PH06 PH07	S	7/15/2022	1440	0.5	Grab/1	1	X	X	X			
CS PH06 PH07A	S	7/15/2022	1445	3'	Grab/1	1	X	X	X			
CS PH06 PH07B	S	7/15/2022	1453	3'	Grab/1	1	X	X	X			
CS PH06C PH07C	S	7/15/2022	1500	4'	Grab/1	1	X	X	X			
Incident Numbers: NAPP220563843, NAPP2207746719												

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 Ti 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 Ti 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 \$5.00 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)
1 <i>[Signature]</i>	1 <i>[Signature]</i>	7/16/22 12:00	4
3			
5			6

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2575-1

SDG Number: 03E1558015

Login Number: 2575

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: 890-2575-1

SDG Number: 03E1558015

Login Number: 2575

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/19/22 11:13 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	



Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2582-1

Laboratory Sample Delivery Group: 03E1558013, 03E1558015
Client Project/Site: PLU 15 TWR

For:

Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Ben Belill

Authorized for release by:

7/25/2022 8:08:35 AM

Jessica Kramer, Project Manager
(432)704-5440

Jessica.Kramer@et.eurofinsus.com

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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 15 TWR

Laboratory Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

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Definitions/Glossary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Job ID: 890-2582-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-2582-1****Receipt**

The samples were received on 7/19/2022 10:57 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.0°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

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30312 and analytical batch 880-30251 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-30312/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: BH01A (890-2582-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Client Sample ID: BH01

Lab Sample ID: 890-2582-1

Date Collected: 07/18/22 10:40

Matrix: Solid

Date Received: 07/19/22 10:57

Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:14	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:14	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:14	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		07/21/22 09:38	07/21/22 17:14	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:14	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		07/21/22 09:38	07/21/22 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	07/21/22 09:38	07/21/22 17:14	1
1,4-Difluorobenzene (Surr)	81		70 - 130	07/21/22 09:38	07/21/22 17:14	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/22/22 10:12	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/22/22 11:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		07/21/22 17:20	07/22/22 08:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		07/21/22 17:20	07/22/22 08:27	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		07/21/22 17:20	07/22/22 08:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130	07/21/22 17:20	07/22/22 08:27	1
o-Terphenyl	86		70 - 130	07/21/22 17:20	07/22/22 08:27	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	179		4.98	mg/Kg			07/22/22 11:21	1

Client Sample ID: BH01A

Lab Sample ID: 890-2582-2

Date Collected: 07/18/22 10:55

Matrix: Solid

Date Received: 07/19/22 10:57

Sample Depth: 3

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:35	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:35	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:35	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		07/21/22 09:38	07/21/22 17:35	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 17:35	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		07/21/22 09:38	07/21/22 17:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	07/21/22 09:38	07/21/22 17:35	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Client Sample ID: BH01A

Lab Sample ID: 890-2582-2

Date Collected: 07/18/22 10:55

Matrix: Solid

Date Received: 07/19/22 10:57

Sample Depth: 3

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	90		70 - 130	07/21/22 09:38	07/21/22 17:35	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/22/22 10:12	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			07/22/22 11:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		07/21/22 17:20	07/22/22 08:48	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		07/21/22 17:20	07/22/22 08:48	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		07/21/22 17:20	07/22/22 08:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	66	S1-	70 - 130			07/21/22 17:20	07/22/22 08:48	1
o-Terphenyl	67	S1-	70 - 130			07/21/22 17:20	07/22/22 08:48	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36.5		5.00	mg/Kg			07/22/22 11:29	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-17129-A-12-E MS	Matrix Spike	122	89
880-17129-A-12-F MSD	Matrix Spike Duplicate	112	96
890-2582-1	BH01	99	81
890-2582-2	BH01A	110	90
LCS 880-30210/1-A	Lab Control Sample	106	95
LCSD 880-30210/2-A	Lab Control Sample Dup	111	95
MB 880-30210/5-A	Method Blank	96	85
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-17068-A-41-D MS	Matrix Spike	84	83
880-17068-A-41-E MSD	Matrix Spike Duplicate	85	84
890-2582-1	BH01	82	86
890-2582-2	BH01A	66 S1-	67 S1-
LCS 880-30312/2-A	Lab Control Sample	135 S1+	142 S1+
LCSD 880-30312/3-A	Lab Control Sample Dup	116	127
MB 880-30312/1-A	Method Blank	128	146 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30210/5-A

Matrix: Solid

Analysis Batch: 30194

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30210

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 11:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 11:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 11:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		07/21/22 09:38	07/21/22 11:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		07/21/22 09:38	07/21/22 11:25	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		07/21/22 09:38	07/21/22 11:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	07/21/22 09:38	07/21/22 11:25	1
1,4-Difluorobenzene (Surr)	85		70 - 130	07/21/22 09:38	07/21/22 11:25	1

Lab Sample ID: LCS 880-30210/1-A

Matrix: Solid

Analysis Batch: 30194

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30210

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09742		mg/Kg		97	70 - 130
Toluene	0.100	0.09907		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1036		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	0.200	0.2101		mg/Kg		105	70 - 130
o-Xylene	0.100	0.1150		mg/Kg		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-30210/2-A

Matrix: Solid

Analysis Batch: 30194

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30210

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1021		mg/Kg		102	70 - 130	5	35
Toluene	0.100	0.1030		mg/Kg		103	70 - 130	4	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2241		mg/Kg		112	70 - 130	6	35
o-Xylene	0.100	0.1231		mg/Kg		123	70 - 130	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 880-17129-A-12-E MS

Matrix: Solid

Analysis Batch: 30194

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30210

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.100	0.07628		mg/Kg		76	70 - 130
Toluene	<0.00200	U	0.100	0.09150		mg/Kg		91	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

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

Lab Sample ID: 880-17129-A-12-E MS

Matrix: Solid

Analysis Batch: 30194

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30210

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.100	0.1027		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	0.0221		0.201	0.2128		mg/Kg		95	70 - 130
o-Xylene	0.00981		0.100	0.1154		mg/Kg		105	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	89		70 - 130

Lab Sample ID: 880-17129-A-12-F MSD

Matrix: Solid

Analysis Batch: 30194

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30210

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0998	0.09120		mg/Kg		91	70 - 130	18	35
Toluene	<0.00200	U	0.0998	0.09287		mg/Kg		93	70 - 130	1	35
Ethylbenzene	<0.00200	U	0.0998	0.09823		mg/Kg		98	70 - 130	4	35
m-Xylene & p-Xylene	0.0221		0.200	0.1979		mg/Kg		88	70 - 130	7	35
o-Xylene	0.00981		0.0998	0.1073		mg/Kg		98	70 - 130	7	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-30312/1-A

Matrix: Solid

Analysis Batch: 30251

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30312

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/21/22 17:20	07/22/22 00:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/21/22 17:20	07/22/22 00:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/21/22 17:20	07/22/22 00:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	128		70 - 130	07/21/22 17:20	07/22/22 00:07	1
o-Terphenyl	146	S1+	70 - 130	07/21/22 17:20	07/22/22 00:07	1

Lab Sample ID: LCS 880-30312/2-A

Matrix: Solid

Analysis Batch: 30251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30312

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	880.1		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1131		mg/Kg		113	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

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

Lab Sample ID: LCS 880-30312/2-A

Matrix: Solid

Analysis Batch: 30251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30312

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	135	S1+	70 - 130
o-Terphenyl	142	S1+	70 - 130

Lab Sample ID: LCSD 880-30312/3-A

Matrix: Solid

Analysis Batch: 30251

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 30312

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	807.8		mg/Kg		81	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	1000	996.6		mg/Kg		100	70 - 130	13	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	116		70 - 130
o-Terphenyl	127		70 - 130

Lab Sample ID: 880-17068-A-41-D MS

Matrix: Solid

Analysis Batch: 30251

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30312

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	907.6		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	796.3		mg/Kg		80	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: 880-17068-A-41-E MSD

Matrix: Solid

Analysis Batch: 30251

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30312

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	917.2		mg/Kg		89	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	807.5		mg/Kg		81	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	84		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30121/1-A

Matrix: Solid

Analysis Batch: 30315

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			07/22/22 10:34	1

Lab Sample ID: LCS 880-30121/2-A

Matrix: Solid

Analysis Batch: 30315

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	273.9		mg/Kg		110	90 - 110

Lab Sample ID: LCSD 880-30121/3-A

Matrix: Solid

Analysis Batch: 30315

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	274.9		mg/Kg		110	90 - 110	0	20

Lab Sample ID: 880-17088-A-1-B MS

Matrix: Solid

Analysis Batch: 30315

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	526		249	790.9		mg/Kg		107	90 - 110

Lab Sample ID: 880-17088-A-1-C MSD

Matrix: Solid

Analysis Batch: 30315

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	526		249	795.1		mg/Kg		108	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

GC VOA

Analysis Batch: 30194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Total/NA	Solid	8021B	30210
890-2582-2	BH01A	Total/NA	Solid	8021B	30210
MB 880-30210/5-A	Method Blank	Total/NA	Solid	8021B	30210
LCS 880-30210/1-A	Lab Control Sample	Total/NA	Solid	8021B	30210
LCSD 880-30210/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30210
880-17129-A-12-E MS	Matrix Spike	Total/NA	Solid	8021B	30210
880-17129-A-12-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30210

Prep Batch: 30210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Total/NA	Solid	5035	
890-2582-2	BH01A	Total/NA	Solid	5035	
MB 880-30210/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30210/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30210/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17129-A-12-E MS	Matrix Spike	Total/NA	Solid	5035	
880-17129-A-12-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Total/NA	Solid	Total BTEX	
890-2582-2	BH01A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Total/NA	Solid	8015B NM	30312
890-2582-2	BH01A	Total/NA	Solid	8015B NM	30312
MB 880-30312/1-A	Method Blank	Total/NA	Solid	8015B NM	30312
LCS 880-30312/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30312
LCSD 880-30312/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30312
880-17068-A-41-D MS	Matrix Spike	Total/NA	Solid	8015B NM	30312
880-17068-A-41-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30312

Prep Batch: 30312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Total/NA	Solid	8015NM Prep	
890-2582-2	BH01A	Total/NA	Solid	8015NM Prep	
MB 880-30312/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30312/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30312/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17068-A-41-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17068-A-41-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Total/NA	Solid	8015 NM	
890-2582-2	BH01A	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

HPLC/IC

Leach Batch: 30121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Soluble	Solid	DI Leach	
890-2582-2	BH01A	Soluble	Solid	DI Leach	
MB 880-30121/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30121/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30121/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17088-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17088-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2582-1	BH01	Soluble	Solid	300.0	30121
890-2582-2	BH01A	Soluble	Solid	300.0	30121
MB 880-30121/1-A	Method Blank	Soluble	Solid	300.0	30121
LCS 880-30121/2-A	Lab Control Sample	Soluble	Solid	300.0	30121
LCSD 880-30121/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30121
880-17088-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30121
880-17088-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30121

Lab Chronicle

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Client Sample ID: BH01

Lab Sample ID: 890-2582-1

Date Collected: 07/18/22 10:40

Matrix: Solid

Date Received: 07/19/22 10:57

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	30210	07/21/22 09:38	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30194	07/21/22 17:14	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30351	07/22/22 10:12	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30385	07/22/22 11:07	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30312	07/21/22 17:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30251	07/22/22 08:27	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	30121	07/20/22 11:51	SMC	XEN MID
Soluble	Analysis	300.0		1			30315	07/22/22 11:21	CH	XEN MID

Client Sample ID: BH01A

Lab Sample ID: 890-2582-2

Date Collected: 07/18/22 10:55

Matrix: Solid

Date Received: 07/19/22 10:57

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	30210	07/21/22 09:38	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30194	07/21/22 17:35	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30351	07/22/22 10:12	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30385	07/22/22 11:07	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30312	07/21/22 17:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30251	07/22/22 08:48	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30121	07/20/22 11:51	SMC	XEN MID
Soluble	Analysis	300.0		1			30315	07/22/22 11:29	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 15 TWR

Job ID: 890-2582-1
SDG: 03E1558013, 03E1558015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2582-1	BH01	Solid	07/18/22 10:40	07/19/22 10:57	0.5
890-2582-2	BH01A	Solid	07/18/22 10:55	07/19/22 10:57	3

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Environment Testing
Xenco

Chain of Custody

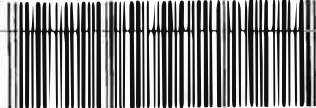
Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, Inc.
Address:	3122 National parks Hwy	Address:	3104 E. Green Street
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	9898540852	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 15 TWR		Turn Around		Pres. Code		ANALYSIS REQUEST										Preservative Codes				
Project Number:		03E1558013, 03E1558015		☒ Routine ☐ Rush		Due Date:		 890-2582 Chain of Custody										None: NO DI Water: H ₂ O				
Project Location:		EDDY COUNTY, NM		TAT starts the day received by the lab, if received by 4:30pm		PO #:												Cool: Cool MeOH: Me				
Sampler's Name:		Conner Shore																HCL: HC HNO ₃ : HN				
																		H ₂ SO ₄ : H ₂ NaOH: Na				
SAMPLE RECEIPT		Temp Blank: <u>Yes</u> No		Wet Ice: <u>Yes</u> No		Parameters		CHLORIDES (EPA: 300.0) TPH (8015) BTEX (8021)										H ₃ PO ₄ : HP				
Samples Received Intact:		<u>Yes</u> No		Thermometer ID: <u>7NM-007</u>														NaHSO ₄ : NABIS				
Cooler Custody Seals:		Yes No <u>N/A</u>		Correction Factor: <u>-0.2</u>														Na ₂ S ₂ O ₃ : NaSO ₃				
Sample Custody Seals:		Yes No <u>N/A</u>		Temperature Reading: <u>5.2</u>														Zn Acetate+NaOH: Zn				
Total Containers:				Corrected Temperature: <u>5.0</u>														NaOH+Ascorbic Acid: SAPC				
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont											Sample Comments				
BH01		S	7/18/2022	1040	0.5'	G	1	X	X	X												
BH01A		S	7/18/2022	1055	3'	G	1	X	X	X												
* BH01B		S	7/18/2022	1100	4'	G	1	X	X	X											* Hold pending 3' sample	
																					Cost Center: 2027711001	
																					Incident Number:	
																					nAPP2205641685	
																					nAPP2207746719	
																					nAPP2205638843	

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	Ti	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	Ti	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 		7.19.22 1057			
3		4			
5		6			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2582-1

SDG Number: 03E1558013, 03E1558015

Login Number: 2582

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: 890-2582-1

SDG Number: 03E1558013, 03E1558015

Login Number: 2582

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 07/20/22 10:53 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	



APPENDIX E

NMOCD Notifications

Tacoma Morrissey

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Wednesday, May 11, 2022 4:57 PM
To: Green, Garrett J
Cc: DelawareSpills /SM; Ben Belill; Aimee Cole; Tacoma Morrissey; Kalei Jennings; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Nobui, Jennifer, EMNRD
Subject: (Extension Approval) - PLU 15 TWR Battery (Incident Numbers nAPP2205641685, nAPP2205638843, nAPP2207746719)

[**EXTERNAL EMAIL**]

RE: Incident #**NAPP2205641685, NAPP2205638843, NAPP2207746719**

Garrett,

Your request for an extension to **August 10th, 2022** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

Robert Hamlet • Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
<http://www.emnrd.state.nm.us/OCD/>



From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Wednesday, May 11, 2022 2:41 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Ben Belill <bbelill@ensolum.com>; Aimee Cole <acole@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; Kalei Jennings <kjennings@ensolum.com>
Subject: [EXTERNAL] XTO - Extension Request - PLU 15 TWR Battery (Incident Numbers nAPP2205641685, nAPP2205638843, nAPP2207746719)

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

All,

PLU 15 TWR Battery (Incident Numbers nAPP2205641685, nAPP2205638843, nAPP2207746719)

XTO is requesting an extension for the current deadlines of May 12, 2022, May 21, 2022, and June 2, 2022 for submitting a remediation work plan, closure, or deferral report required in 19.15.29.12.B.(1) NMAC at the PLU 15 TWR Battery for Incident Numbers nAPP2205641685, nAPP2205638843, and nAPP2207746719. The releases occurred on February 11,

2022, February 20, 2022, and March 4, 2022, respectively. Fluids were released on pad around active production equipment. An initial site assessment has been conducted to assess each release area and analytical results indicate that additional remediation is required.

Due to all three releases occurring on the same pad, delineation and remediation activities are scheduled to be completed concurrently. XTO requests to extend the deadline to complete remediation activities and submit a closure or deferral report for Incident Numbers nAPP2205641685, nAPP2205638843, and nAPP2207746719 to August 10, 2022, which is a 90-day extension of the due date for the first release.

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@state.nm.us; [Bratcher, Mike, EMNRD](#); [Hamlet, Robert, EMNRD](#)
Cc: [Pennington, Shelby G](#); [Tacoma Morrissey](#); [DelawareSpills /SM](#)
Subject: XTO - Sampling Notification (week of 7/11/22 - 7/15/22)
Date: Friday, July 8, 2022 1:21:32 PM

[**EXTERNAL EMAIL **]

All,

XTO plans to complete final sampling activities at the following sites the week of July 11, 2022.

Monday, July 11

- PLU 442, 443 / nAPP2214734717

Wednesday, July 13

- PLU 15 TWR Battery / nAPP2205641685, nAPP2205638843, nAPP2207746719

Thursday, July 14

- PLU 15 TWR Battery / nAPP2205641685, nAPP2205638843, nAPP2207746719

Friday, July 15

- PLU 15 TWR Battery / nAPP2205641685, nAPP2205638843, nAPP2207746719

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

Tacoma Morrissey

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Monday, July 11, 2022 5:10 PM
To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD
Cc: Ben Belill; DelawareSpills /SM
Subject: XTO 48 Liner Notification - PLU 15 TWR - nAPP2205641685, nAPP2205638843 and nAPP2207746719

[**EXTERNAL EMAIL**]

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 15 TWR Battery released on (2/11/22 nAPP2205641685, 2/20/22 nAPP2205638843, 3/4/22 nAPP2207746719), on Thursday, July 14, 2022, at 9:30am MST. A 24 hour release notification for nAPP2205641685 was sent out on Saturday, February 12, 2022 1:42 PM since the release was greater than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: (32.209, -103.770)

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 132690

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 132690
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	XTO's deferral requests to complete final remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first. XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. The areas requested for deferral are identified on the site map as "SW-4" and "S-7A". The areas have been delineated and documented in the report. Currently, OCD approves this request. The Deferral Request and C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue. (This is a federal site and will require like approval from BLM.)	11/22/2022