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	NAPP2217931599
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

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

Location of Release Source

Latitude 32.33641 Longitude -103.83180
(NAD 83 in decimal degrees to 5 decimal places)

Site Name James Ranch Unit 108H	Site Type Production Well
Date Release Discovered 06/22/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
G	01	23S	30E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 1.59	Volume Recovered (bbls) .09
☒ Produced Water	Volume Released (bbls) 7.26	Volume Recovered (bbls) .41
	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: External corrosion caused a flowline to release fluids to soil. A vacuum truck recovered all free fluids. A third-party contractor has been retained for remediation purposes.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2217931599
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? N/A

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

Initial Response

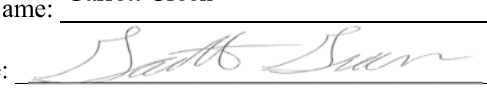
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

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

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

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

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

Printed Name: Garrett Green
Title: SSHE Coordinator
Signature: 
Date: 06/27/2022
email: garrett.green@exxonmobil.com
Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon
Date: 06/28/2022

Incident ID	NAPP2217931599
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2217931599
District RP	
Facility ID	
Application ID	

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

Printed Name: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature:_  _____ Date: ____12/19/2022_____

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

OCD Only

Received by: ___Jocelyn Harimon_____ Date: ___12/19/2022___

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2217931599
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Garrett Green Title: Environmental Coordinator

Signature: Garrett Green Date: 12/19/2022

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

OCD Only

Received by: Jocelyn Harimon Date: 12/19/2022

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

Signature: Date:

Incident ID	NAPP2217931599
District RP	
Facility ID	
Application ID	

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☒ 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)

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

Printed Name: Garrett Green Title: Environmental Coordinator

Signature: Garrett Green Date: 12/19/2022

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

OCD Only

Received by: Jocelyn Harimon Date: 12/19/2022

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

Signature: Robert Hamlet Date: 4/28/2023

ENSOLUM

December 19, 2022

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

Re: Remediation Work Plan
James Ranch Unit 108H
Incident Number nAPP2217931599
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Remediation Work Plan* (*Work Plan*) to address impacted soil at the James Ranch Unit 108H (Site). Soil was impacted due to a release of crude oil and produced water. Based on delineation activities and laboratory analytical results, XTO is submitting this *Work Plan* describing remediation actions completed to date and proposing to investigate naturally occurring chloride concentrations within the shallow caliche formation identified in the area.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit G, Section 1, Township 23 South, Range 30 East, in Eddy County, New Mexico (32.33641°N, 103.83180°W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On June 22, 2022, corrosion on a flowline resulted in the release of 7.26 barrels (bbls) of produced water and 1.59 bbls of crude oil into the pasture underneath active surface flowlines. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 0.41 bbls of produced water and 0.09 bbls of crude oil were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on June 27, 2022. The release was assigned Incident Number nAPP2217931599.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to determine applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. On June 4, 2019, a soil boring (C-4325) was drilled within a ½-mile east of the Site. Soil boring C-4325 was drilled to a depth of 150 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activites. The borehole was left open for over 72 hours to

allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 150 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. Shallower soil borings permitted by the NMOSE, C-03559 point of diversion (POD)-1 through POD -4, were drilled and plugged just south of the release in 2012. The deepest soil boring, POD-1, was drilled to 50 feet bgs and no groundwater was encountered in any of the shallow soil borings. All wells used to determing depth to groundwater are depicted on Figure 1 and the Well Record and Log for each well is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a freshwater emergent wetland, located approximately 3,919 feet southeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is underlain by unstable geology (high potential karst designation area).

Based on the existence of high potential karst underlying the Site, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

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

DELINEATION SOIL SAMPLING ACTIVITIES

On July 26, 2022, Ensolum personnel completed a Site assessment to evaluate the release extent based on information provided on the Form C-141 and visual observations. Seven delineation soil samples (SS01 through SS07) were collected within and around the release extent from a depth of approximately 0.5 feet bgs. Delineation soil samples SS01 through SS03 were collected within the release extent, and samples SS04 through SS07 were collected around the release extent to confirm the lateral exent. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site assessment and a photographic log 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 under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following constituents of concern (COC): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they are collected may not have equilibrated to the 6 degrees Celcius required for shippment and long term storage, but are considered to have been received in acceptable condition.

Two potholes (PH01 and PH02) and one borehole (BH03) were advanced by use of heavy equipment and hand auger. Potholes PH01 and PH02 were advanced to a depth of approximately 7 feet bgs and were collected in the vicinity of delineation soil samples SS01 and SS02, respectively. Discrete delineation soil samples were collected from each pothole at depths ranging from 2 feet bgs to 7 feet bgs. Borehole BH03 was advanced in the vicinity of delineation soil sample SS03 to a depth of approximately 1-foot bgs until auger refusal. A sample was collected a depth of 1-foot bgs. Soil from each pothole and borehole was field screened and handled as described above. Field screening results and observations for the potholes and borehole were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 2.

Ensolum observed a caliche formation in PH01 and PH02 between 3 and 7 feet bgs exhibiting elevated (greater than 3,000 mg/kg) chloride field screening results. As such, Ensolum advanced one pothole (BG01) to evaluate naturally occuring chloride concentrations outside of the release extent and in an area that does not appear to have been disturbed by oil and gas operations. Pothole BG01 was completed approximately 60 feet northeast of the edge of the release extent and was advanced to a depth of 6 feet bgs. Discrete soil samples were collected at depths of 0.5 feet bgs in a poorly graded sand, and 4 feet bgs and 6 feet bgs in the underlying caliche formation. Field screening results and observations for the pothole was logged on lithologic/soil sampling logs, which are included in Appendix C.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results indicate TPH concentrations exceeded 100 mg/kg in samples collected within the release footprint from 0.5 to 4 feet bgs in SS01/PH01 and at the ground surface at SS02 and SS03. Similarly, chloride concentrations exceeded 600 mg/kg within the release footprint in samples from the ground surface in SS01, SS02, and SS03 and at depth in PH01 and PH02. Chloride concentrations detected at depth were variable, ranging from 3,160 mg/kg to 26,700 mg/kg. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix D.

Laboratory analytical results for soil samples from BG01 collected from the underlying caliche formation at 4 feet bgs, and 6 feet bgs, indicated chloride concentrations were within range of those detected in the subsurface in similar lithology within the release footprint.

PROPOSED REMEDIATION WORK PLAN

Based on the presence of elevated TPH concentrations in soil within the release footprint, XTO proposes to excavate soil containing TPH exceeding 100 mg/kg. Based on field screening and laboratory analytical results, the excavation will proceed to approximately 4 feet bgs. Following removal of the soil, Ensolum personnel will collect five-point confirmation soil samples representing at most every 200 square feet of the excavation floor and sidewalls. The soil samples will be handled as described above and delivered to Eurofins for analysis of BTEX, TPH, and chloride.

Based on the laboratory analytical results for chloride concentrations in samples collected from BG01, PH01, and PH02, Ensolum suggests there is potential for naturally occuring elevated chloride in the underlying caliche formation, which may demonstrate a shallowing westerly trend based on auger refusal in BH03 and lessening visible vegetation in the same direction. To evaluate naturally occurring chloride in the identified caliche formation, XTO will advance four additional background potholes (BG02 through BG05) in undisturbed pasture areas located approximately 180 feet to 280 feet from the edge of the release extent in multiple directions. The locations proposed are as close as possible to the

release but outside of disturbed areas. Soil samples will be collected from each pothole at 1-foot intervals and include both the caliche formation and overlying sand. The soil samples will be field screened for chloride and advanced until chloride concentrations are less than 600 mg/kg or enough representative samples of the caliche have been collected to document naturally occurring conditions. The delineation soil samples will be handled as described above and analyzed at the laboratory for chloride.

Following excavation of TPH-impacted soil within the release footprint and completion of background sampling, XTO will submit a report requesting closure based on removal of impacted soil or a revised work plan to address any remaining chloride in soil exceeding background concentrations. XTO will complete the proposed remediation activities within 90 days of the date of approval of this *Work Plan*.

XTO believes the scope of work described above is equally protective of human health, the environment, and groundwater. As such, XTO respectfully requests approval of the *Work Plan* from NMOCD.

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

Sincerely,
Ensolum, LLC

Benjamin J. 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	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Record
Appendix B	Photographic Log
Appendix C	Lithologic / Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications

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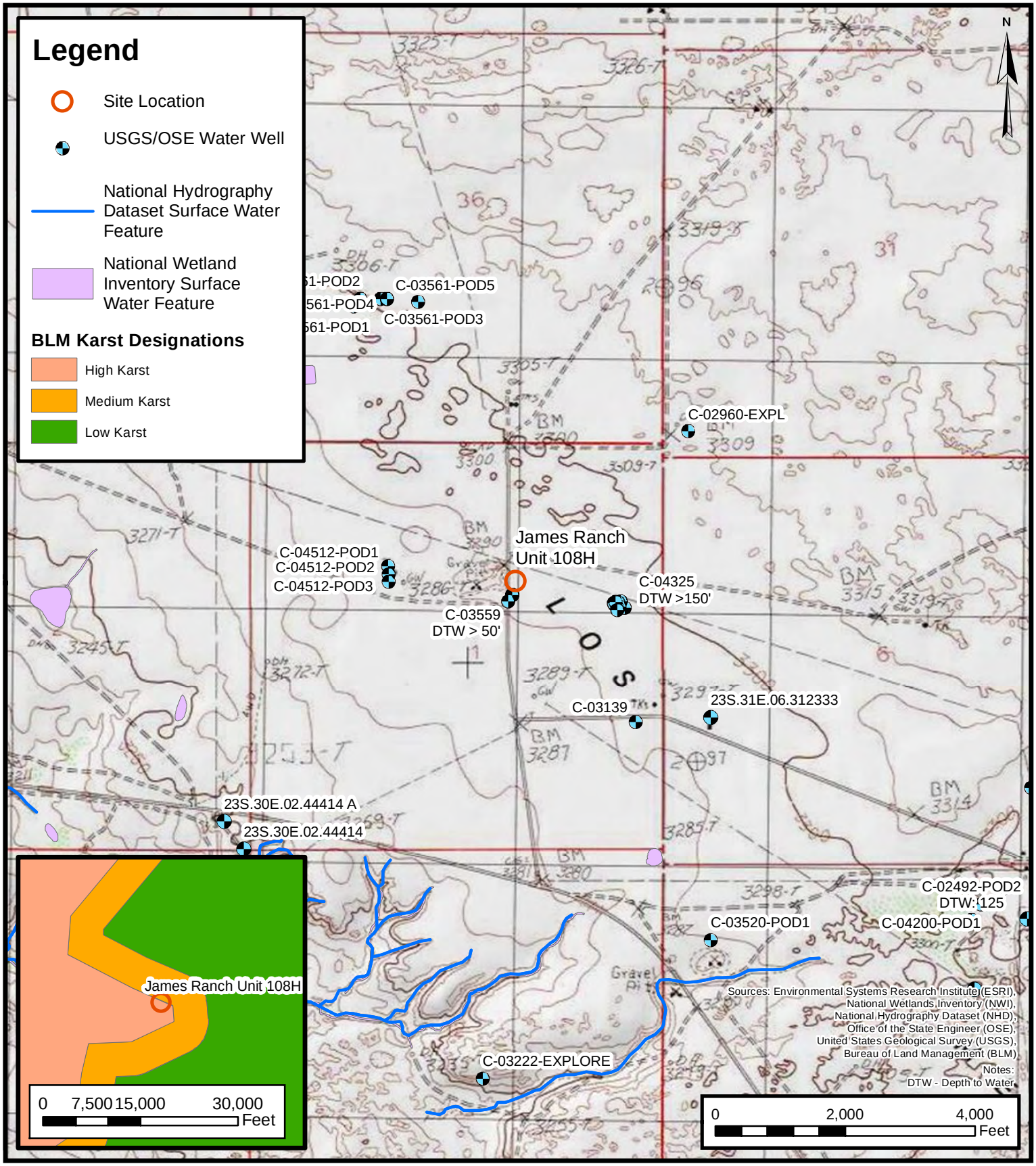
FIGURES



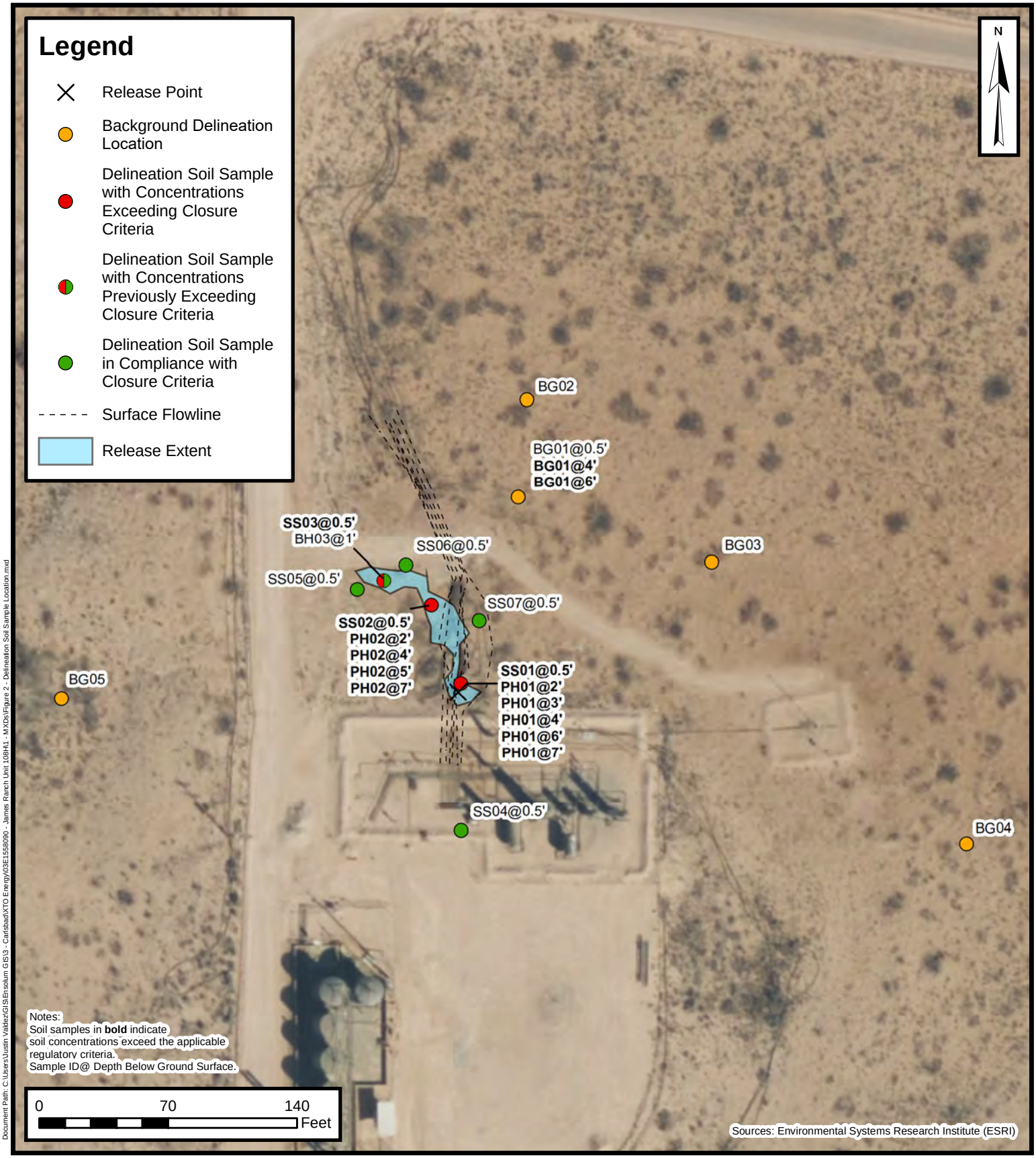
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

James Ranch Unit 108H
XTO Energy, Inc
Unit G Sec 1 T23S R30E
Eddy County, New Mexico
Incident Number: nAPP2217931599

FIGURE

1



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\3 - Carlsbad\XTO Energy\03E1558090 - James Ranch Unit 108H\1 - MXDs\Figure 2 - Delineation Soil Sample Location.mxd

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations

James Ranch Unit 108H
XTO Energy, Inc
Unit G Sec 1 T23S R30E
Eddy County, New Mexico
Incident Number: nAPP2217931599

FIGURE
2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
JRU 108H
XTO Energy, Inc
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
SS01	07/26/2022	0.5	1.05	41.5	2,140	16,300	4,760	18,440	**23,200**	**4,930**
PH01	10/20/2022	2	<0.0498	2.40	935	3,250	2,180	4,190	**6,370**	**2,870**
PH01	10/20/2022	3	<0.0497	32.6	848	1,970	1,190	2,820	**4,010**	**12,300**
PH01	10/20/2022	4	<0.0499	27.1	531	1,340	824	1,876	**2,700**	**3,160**
PH01	10/20/2022	6	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	**26,700**
PH01	10/20/2022	7	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	**4,100**
SS02	07/26/2022	0.5	<0.0499	1.98	1,050	9,700	1,720	10,750	**12,500**	**1,650**
PH02	10/20/2022	2	<0.00201	<0.00402	<49.9	63.5	<49.9	63.5	63.5	**13,600**
PH02	10/20/2022	4	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	**22,100**
PH02	10/20/2022	5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	**6,400**
PH02	10/20/2022	7	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	**5,550**
SS03	07/26/2022	0.5	<0.0497	13.3	188	9,420	1,960	9,608	**12,400**	**9,420**
BH03	09/08/2022	1	<0.00199	<0.00398	<49.9	<49.9	75.6	<49.9	75.6	54.1
BG01	10/20/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	10.4
BG01	10/20/2022	4	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	**4,860**
BG01	10/20/2022	6	0.00216	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	**4,650**
SS04	07/26/2022	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	131
SS05	07/26/2022	0.5	<0.00199	<0.00398	<49.8	<49.8	62.8	<49.8	62.8	13.6
SS06	07/26/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	10.9
SS07	07/26/2022	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	8.7

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

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APPENDIX A

Referenced Well Records

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

Identifier	Date
C-4325 (MW01)	5/22/19
Project Name: JRU 10	RP Number: 2RP-3404, 2RP-3464, 2RP-3179

LITHOLOGIC / SOIL SAMPLING LOG

Logged By:	Method:
BEN BELILL	Sonic

Lat/Long:	Field Screening:	Hole Diameter:	Total Depth:
32.335339, -103.827697	CHLORIDES, TPH, BTEX, GRO, DRO, and MRO	6.15"	150'

Comment: All Chloride test include a 60% error factor

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0		(SP-SM)	SILTY SAND, dry, brn/red, poorly graded, f.-m., some vegetation
D	<112	0.5	N	MW01	1	1'		
D	<112	0.4	N	MW01A	2	2'		
D	<112	0.1	N	MW01B	3	3'		
D	<112	0.3	N	MW01C	4	4'	CALICHE	CALICHE w/ Sand, dry, lt brn/~~dk brn~~ tan, dly carb, some m. red sand, no odor
D	<112	0.1	N	MW01D	5	5'		
D	<112	0.5	N	MW01E	6	6'		
D	<112	0.4	N	MW01F	7	7'		
D	<112	0.3	N	MW01G	8	8'		
D	403	0.1	N	MW01H	9	9'	SP	SAND w/ Caliche, dry, lt brn/brn, f.-m., poorly graded, no odor. SAA
D	345	0.8	N	MW01I	10	10'		
D	345	3.1	N	MW01J	11	11'	(SP-SM)	~~sandy SILT~~, dry, brn/red, ~~complete~~ silty SAND, no odor, some ~~fine sand~~ poorly graded, f.-m., no odor.
				~~MW01K~~	12	12'		

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Identifier: MW01 | Date: 5/22/19
Project Name: JRU 10 | RP Number: 2RP-3464, 2RP-3179, 2RP-3243

LITHOLOGIC / SOIL BORING LOG

Logged By: BEN BELILL | Method:
Lat/Long: | Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO | Hole Diameter: [redacted] | Total Depth:
Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
1650 D	<112	1.6	N	MW01K	12	12'	(SP-SM)	STA
D	<112	3.8	N	MW01L	13	13'		
D	<112	4.9	N	MW01M	14	14'		
D	<112	4.8	N	MW01N	15	15'		
D	<112	1.1	N	MW01O	16	16'		
D	<112	0	N	MW01P	17	17'		
D	<112	4.1	N	MW01Q	18	18'	ML	SILT, dry, brn/red, non plastic, no odor
D	<112	6.5	N	MW01R	19	19'		
D	<180	1.3	N	MW01S	20	20'		
D	<180	9.2	N	MW01T	21	21'		
D	<112	7.4	N	MW01U	22	22'		
1725 D	<112	5.1	N	MW01V	23	23'		
					24	24		

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Identifier: MW01	Date: 5/22/19
Project Name: JRU 10	RP Number: 2RP-3464, 2RP-3179, 2RP-3243
Logged By: BEN BELILL	Method:
Lat/Long:	Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.
Hole Diameter: 6"	Total Depth:

LITHOLOGIC / SOIL BORING LOG

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	6.5	N	MW01 W	24	24	ML	SAA
D	<112	4.6	N	MW01 X	25	25'		
D	<112	5.1	N	MW01 Y	26	26'		
D	<112	9.4	N	MW01 Z	27	27'		
D	<112	0.8	N	MW01 AA	28	28		
D	<112	1.2	N	MW01 AB	29	29		
D	<112	3.9	N	MW01 AC	30	30		
D	<112	0.5	N	MW01 AD	31	31		
D	<112	3.0	N	MW01 AE	32	32		
D	<112	3.1	N	MW01 AF	33	33		
D	<112	0.0	N	MW01 AG	34	34		
	<112	0.0	N	MW01 AH	35	35		
					36			

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Identifier:	Date:
MW01	5/22/14 - 5/23/14
Project Name: JRU 10	RP Number: 2RP-3464, 2RP-3179, 2RP-3243
Logged By: BEN BELILL	Method:
Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.	Hole Diameter: 6.15"
Lat/Long:	Total Depth:

LITHOLOGIC / SOIL BORING LOG

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	4112	1.0	N	MW01 AI	36	36	CL	Silty CLAY, dry, red/brn, low plasticity, no odor.
D	4112	0.0	N	MW01 AJ	37	37		
D	4112	1.5	N	MW01 AK	38	38		
D	4112	0.0	N	MW01 AL	39	39		
D	4112	0.0	N	MW01 AM	40	40		
D	K112	0.0	N	MW01 AN	41	41		
D	K112	1.4	N	MW01 AO	42	42		
D	K112	2.8	N	MW01 AP	43	43		
D	K112	1.8	N	MW01 AQ	44	44		
D	K112	2.5	N	MW01 AR	45	45		
D	K112	1.9	N	MW01 AS	46	46		
D	K112	2.0	N	MW01 AT	47	47		
					48			

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Identifier	Date
MW01	5/23/19
Project Name: JRU 10	RP Number: 2RP-3464, 2RP-3179, 2RP-3243

LITHOLOGIC / SOIL BORING LOG

Lat/Long:	Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.	Logged By: BEN BELILL	Method:
		Hole Diameter: 6.15"	Total Depth:

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0730 D	<112	0.3	N	MW01 AW	48	48	CL	silty CLAY, dry, red/brn, low plasticity, no odor
0735 D	<112	1.3	N	MW01 AV	49	49		silty CLAY w/ caliche, dry, red/brn, low plasticity, some poly consld tan caliche gravel, no odor
0740 D	<112	1.2	N	MW01 AW	50	50		silty CLAY, dry, red/brn, low plasticity no odor
0750 D	<112	1.2	N	MW01 AX	51	51		
0800 D	<112	1.3	N	MW01 AY	52	52		
0810 D	<112	1.5	N	MW01 AZ	53	53		
D	<112	0.1	N	MW01 BA	54	54		
D	<112	0.3	N	MW01 BB	55	55		
D	<112	2.0	N	MW01 BC	56	56		
D	<112	2.9	N	MW01 BD	57	57		
D	<112	3.8	N	MW01 BE	58	58		
D	<112	2.3	N	MW01 BF	59	59		
					60			

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Identifier: MW01	Date: 5/23/19
Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243

LITHOLOGIC / SOIL BORING LOG

Lat/Long:	Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.	Logged By: BEN BELILL	Method:
		Hole Diameter:	Total Depth:

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	2.8	N	MW01A	60	60	CL	Silty CLAY, dry, brn/red, low plasticity, no odor.
D	<112	2.9	N	MW01B	H 61	61		
0845 D	<112	2.8	N	MW01B	I 62	62		
D	<112	3.4	N	MW01B	J 63	63		
D	<112	1.6	N	MW01B	K 64	64		
D	<112	11.7	N	MW01B	L 65	65		
D	<112	4.5	N	MW01B	M 66	66		
0900 D	<112	3.7	N	MW01B	N 67	67		
D	<112	1.9	N	MW01B	O 68	68		
D	<112	1.1	N	MW01B	P 69	69		
D	<112	2.3	N	MW01B	Q 70	70		
D	<112	1.7	N	MW01B	R 71	71		
					72			

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Identifier: MW01	Date: 5/23/19
Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
Logged By: BEN BELILL	Method:
Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO	Hole Diameter: Total Depth:

LITHOLOGIC / SOIL BORING LOG

Lat/Long:

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0930								
D	<112	3.1	N	MW01A	S 72	72	CL	SAA
D	<112	1.0	N	MW01B	T 73	73		
D	<112	1.1	N	MW01B	V 74	74		
D	<112	6.0	N	MW01B	V 75	75		
D	<112	5.6	N	MW01B	W 76	76		
D	<112	3.4	N	MW01B	X 77	77		
D	<112	1.1	N	MW01B	Y 78	78		
D	243	1.2	N	MW01B	Z 79	79		
D	<112	2.4	N	MW01C	A 80	80		
D	<112	4.7	N	MW01C	B 81	81		
D	<112	3.7	N	MW01C	C 82	82		
D	<112	3.7	N	MW01C	D 83	83		
					84			

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Identifier:	Date:
MW01	5/23/19
Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243

LITHOLOGIC / SOIL BORING LOG

Lat/Long.	Field Screening. CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.	Logged By: BEN BELILL	Method:
		Hole Diameter:	Total Depth:

Comment All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	4.9	N	MW01CE	84	84	CL	SAA
D	<112	1.5	N	MW01CF	85	85		
D	<112	3.3	N	MW01CG	86	86		
D	<112	2.4	N	MW01CH	87	87		
D	<112	1.6	N	MW01CI	88	88		
D	<112	1.1	N	MW01CJ	89	89		
D	<112	0.9	N	MW01CK	90	90		
D	<112	2.6	N	MW01CL	91	91	CL	~~CLA~~ silty ~~CL~~ CLAY, dry, lt brn/red, low plasticity, no odor.
D	<112	3.8	N	MW01CM	92	92		
D	<112	1.4	N	MW01CN	93	93		
D	<112	1.2	N	MW01CO	94	94		
D	<112	0.8	N	MW01CP	95	95		

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Identifier: MW01	Date: 5/23/19
Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
Logged By: BEN BELILL	Method:
Hole Diameter:	Total Depth:

LITHOLOGIC / SOIL BORING LOG

Lat/Long:

Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO.

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	1.4	N	MW01C	Q 96	96	CL	silty CLAY, brn/red, low plasticity, no odor.
D	<112	4.2	N	MW01C	R 97	97'		
D	<112	2.2	N	MW01C	S 98	98'		
D	<112	1.8	N	MW01C	T 99	99'		
D	<112	1.1	N	MW01C	U 100	100'		
D	<112	1.5	N	MW01C	V 101	101		
D	<112	0.4	N	MW01C	W 102	102		
D	<112	1.11	N	MW01C	X 103	103		
D	<112	1.6	N	MW01C	Y 104	104		
D	<112	0.7	N	MW01C	Z 105	105		
	<112	1.3	N	MW01D	A 106	106		
	<112	0.6	N	MW01D	B 107	107		
					108			

1055

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Identifier: MW01	Date: 5/23/19 5/24
Project Name: JRU 10	RP Number: 2RP-3179, 2RP-3464, 2RP-5243
LITHOLOGIC / SOIL BORING LOG	Logged By: BEN BELILL / Method:
Lat/Long:	Field Screening: CHLORIDES, TPH, BTEX, GRO, MRO, and DRO. / Hole Diameter: / Total Depth:

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	1.3	N	MW01D	C 72/108	108	CL	SAA
D	<112	0.3	N	MW01D	D 73 109	109		
D	<112	0.6	N	MW01D	E 74 110	110		
D	<112	0.6	N	MW01D	F 75 111	111		
D	<112	0.5	N	MW01D	G 76 112	112		
D	<112	3.5	N	MW01D	H 77 113	113		
D	<112	5.3	N	MW01D	I 78 114	114		
D	<112	1.3	N	MW01D	J 79	115		
D	<112	3.3	N	MW01D	K 80	116		
D	<112	2.9	N	MW01D	L 81	117		
D	<112	3.3	N	MW01D	M 82	118		
D	<112	4.8	N	MW01D	N 83	119		

5/24

84

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Identifier	Date
MW01	5/29/19 - 6/3/19
Project Name: JRU 10	RP Number: 2RP-3404, 2RP-3464, 2RP-3179
Logged By: BEN BELILL	Method:
Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO	Hole Diameter: 6.15"
Lat/Long:	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	3.8	N	MW01DO	120	120	CL	SAA
D	<112	3.1	N	MW01DP	121	121		
D	<112	1.2	N	MW01DQ	122	222		
D	<112	0.4	N	MW01DR	123	123		
D	<112	0.5	N	MW01DS	124	124		
D	<112	0.6	N	MW01DT	125	125		
D	<112	0.8	N	MW01DU	126	126		
D	<112	0.7	N	MW01DV	127	127		
D	<112	1.0	N	MW01DW	128	128		
D	<112	0.4	N	MW01DX	129	129		
D	<112	0.5	N	MW01DY	130	130		
D	<112	1.1	N	MW01DZ	131	131		
					132			

5/29
6/3
1540
1550

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Identifier:	Date:
MW01	6/3/19 - 6/4/19
Project Name: JRU 10	RP Number: 2RP-3404, 2RP-3464, 2RP-3179
Logged By: BEN BELILL	Method:
Hole Diameter: 6.15"	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.

Comment: All Chloride test include a 60% error factor.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D	<112	0.8	N	MW01E A	132	132	CL	START
D	<112	0.7	N	MW01E B	133	133		
D	<112	0.8	N	MW01E C	134	134		
D	<112	0.9	N	MW01E D	135	135		
D	<112	0.6	N	MW01E E	136	136		
1700 6/4 D	<112	0.7	N	MW01E F	137	137		
0900 D	<112	1.0	N	MW01E G	138	138	CL	CLAY w/ gravel, dry, lt brn/red, low plasticity, no odor.
0905 D	<112	0.9	N	MW01E H	139	139		
0960 D	<112	3.8	N	MW01E I	140	140	CL	~~CLAY~~ silty CLAY, brown/red, low plasticity, no odor
0915 D	<112	3.5	N	MW01E J	141	141		
0920 D	<112	3.1	N	MW01E K	142	142		
0925 D	<112	1.8	N	MW01E L	143	143		
					144			

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Identifier: MW01	Date: 6/4/19
Project Name: JRU 10	RP Number: 2RP-3404, 2RP-3464, 2RP-3179
Logged By: BEN BELILL	Method:
Lat/Long:	Field Screening: CHLORIDES, TPH, BTEX, GRO, DRO, and MRO.
Hole Diameter: 6.15"	Total Depth:

LITHOLOGIC / SOIL SAMPLING LOG

Comment: All Chloride test include a 60% error factor.

	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
0930	D	<112	3.5	N	MW01E	M	144	CL	SAA
0935	D	<112	3.2	N	MW01E	N	145		
0940	D	<112	2.7	N	MW01E	O	146		
0945	D	<112	3.1	N	MW01E	P	147		
0950	D	<112	3.0	N	MW01E	Q	148		
0955	D	<112	1.8	N	MW01E	R	149		
1000	D	<112	1.5	N	MW01E	S	150		EOB@150'

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

2012 AUG 13 P 1:13

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER): JAMES RANCH UNIT #36 BATTERY SB-1 (POD-1)	OSE FILE NUMBER(S): C-03559
WELL OWNER NAME(S): BOPCO OPERATING CO	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: 6 DESTA DRIVE SUITE 3700, P.O. BOX 2760	CITY: MIDLAND STATE: TX ZIP: 79702

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	20	9.00	N
LONGITUDE	103	49	55.00	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: FROM THE CORNER OF HWY 128 AND WIPP RD GO N FOR 4TH OF MILE TURN L FOLLOW CALICHE RD TO SITE.

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
¼	¼	¼	¼	1	23 ☐ NORTH ☑ SOUTH	30 ☑ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT
			G

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1478	MARTIN STRAUB	STRAUB CORPORATION

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7-31-12	7-31-12	0	50'	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:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0	50'	5"	N/A	N/A	N/A	N/A	N/A

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

TOTAL ESTIMATED WELL YIELD (GPM):

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3559	POD NUMBER	1	TRN NUMBER	507137
LOCATION	Expl - Boreholes	23E. 30E. 1. 234		PAGE 1 OF 2	

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☐ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	0	2'	5"	. 5 BAGS OF CEMENT		TOPLOAD
	2'	50'	5"	11BAGS OF 3/8 HOLE PLUG		TOPLOAD

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	2'	2'	TAN FINE SAND - CALICHE	☐ YES ☑ NO
2'	5'	3'	BASIN FINE SAND - CALICHE	☐ YES ☑ NO
5'	8"	3'	TAN FINE SAND - SANDSTONE	☐ YES ☑ NO
8'	13'	5'	RED FINE SAND	☐ YES ☑ NO
13'	15'	2'	TAN FINE SAND	☐ YES ☑ NO
15'	36'	21'	RED FINE SAND (DRK) - SANDSTONE WITH CLAY	☐ YES ☑ NO
36'	50'	14'	RED SILTY SAND - SILTY CLAY	☐ YES ☑ NO
TD	50'			☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

SOIL BORING WAS PLUGGED AND ABANDONED UPON COMPLETION OF SAMPLING
EDDY COUNTY NM
EDWARD BRYAN (DRILLING SUPERVISOR)

8. 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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Martin Stroh — SIGNATURE OF DRILLER

8-10-12 — DATE

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER C-3559	POD NUMBER	TRN NUMBER 507137
LOCATION		PAGE 2 OF 2

ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc
James Ranch Unit 108H
Incident Number nAPP2227351943

Photograph 1 Date: 7/26/2022
Description: Site assessment activities, release extent
View: Southwest

Photograph 2 Date: 9/8/2022
Description: Delineation activities, release extent
View: Northwest

Photograph 3 Date: 9/8/2022
Description: Delineation activities, release extent
View: South

Photograph 4 Date: 10/20/2022
Description: Delineation activities, PH01
View: East

ENSOLUM

APPENDIX C

Lithologic Soil Sampling Logs

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Sample Name: PH01	Date: 10/20/2022
Site Name: JRU 108H	
Incident Number: NAPP2217931599	
Job Number: 03E1558090	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: BB	Method: Backhoe
Coordinates: 32.33641,-103.83180	Hole Diameter: N/A
	Total Depth: 7'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% correction factor was added to all chloride field screenings.

Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	SP	0-4', SAND, moist, reddish brown, poorly graded, fine grained, some small roots, strong H/C odor, dark brown-grey staining.
M	1,037	3,516	Y	SS01	0.5			
M	470	438	N	PH01	1	1		1'-4', no stain.
M	2,676	565	N	PH01	2	2		
M	11,748	879	N	PH01	3	3		
M	3,365	1,173	N	PH01	4	4	CCHE	4'-7', CALICHE, moist, light brown-light grey, moderately consolidated, some fine-medium grained poorly graded light grey sand, strong H/C odor, no stain.
M	19,297	1,055	N			5		
M	21,151	61	N	PH01	6	6		6'-7', moderately-poorly consolidated, trace H/C odor.
D	7,673	1.8	N	PH01	7	7		@7', no odor.
							TD	Total depth at 7 feet bgs.
						8		
						9		
						10		
						11		
						12		

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Sample Name: PH02	Date: 10/20/2022
Site Name: JRU 108H	
Incident Number: NAPP2217931599	
Job Number: 03E1558090	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: BB	Method: Backhoe
Hole Diameter: N/A	Total Depth: 7'

Coordinates: 32.33641,-103.83180

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% correction factor was added to all chloride field screenings.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	SP	0-3', SAND, moist, reddish brown, poorly graded, fine grained, some small roots, strong H/C odor, dark brown-grey staining.
M	2,615	326	Y	SS02	0.5			0.5'-3', no stain.
M	>3600	51	N	PH02	1	1		1'-2.5', mild H/C odor.
M	>3600	8.9	N	PH02	2	2		2.5'-3', no odor.
M	>3600	1.3	N			3	CCHE	3'-7', CALICHE, moist, light brown-light grey, moderately consolidated, some fine-medium grained poorly graded light grey sand, no stain, no odor.
M	11,748	1.0	N	PH02	4	4		
D	>3600	0.1	N	PH02	5	5		
D	>3600	0.2	N			6		6'-7', moderately-poorly consolidated.
D	>3600	0.6	N	PH02	7	7	TD	Total depth at 7 feet bgs.
						8		
						9		
						10		
						11		
						12		

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Sample Name: BH03	Date: 9/8/2022
Site Name: JRU 108H	
Incident Number: NAPP2217931599	
Job Number: 03E1558090	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: BB	Method: Hand Auger
Coordinates: 32.33641,-103.83180	Hole Diameter: N/A
	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. A 40% correction factor was added to all chloride field screenings.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
M	280	630	Y	SS03	0.5	0	SP	0-1', SAND, moist, reddish brown, poorly graded, fine grained, some small roots, mild H/C odor, dark brown staining. 0.5'-1', no stain, no odor.
M	<112	8.9	N	BH03	1	1	TD	Total depth at 1 foot bgs, auger refusal.
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						10		
						11		
						12		

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2653-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
8/4/2022 3:32:46 PM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-2653-1
SDG: Eddy County NM

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Job ID: 890-2653-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2653-1

Receipt
The samples were received on 7/26/2022 4:02 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

GC VOA
Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-31337 and analytical batch 880-31375 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.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS02 (890-2653-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-31465 and analytical batch 880-31452 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS01 (890-2653-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Client Sample ID: SS01

Lab Sample ID: 890-2653-1
Matrix: Solid
Date Collected: 07/26/22 09:00
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.05		0.200		mg/Kg		08/04/22 08:51	08/04/22 14:19	100
Toluene	11.6		0.200		mg/Kg		08/04/22 08:51	08/04/22 14:19	100
Ethylbenzene	5.96		0.200		mg/Kg		08/04/22 08:51	08/04/22 14:19	100
m-Xylene & p-Xylene	15.6		0.400		mg/Kg		08/04/22 08:51	08/04/22 14:19	100
o-Xylene	7.28		0.200		mg/Kg		08/04/22 08:51	08/04/22 14:19	100
Xylenes, Total	22.9		0.400		mg/Kg		08/04/22 08:51	08/04/22 14:19	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*139*	*S1+*	*70 - 130*	*08/04/22 08:51*	*08/04/22 14:19*	*100*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*08/04/22 08:51*	*08/04/22 14:19*	*100*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	41.5		0.400		mg/Kg			08/04/22 09:41	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	23200		250		mg/Kg			07/31/22 10:38	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	2140		250		mg/Kg		07/29/22 08:50	07/31/22 03:41	5
Diesel Range Organics (Over C10-C28)	16300		250		mg/Kg		07/29/22 08:50	07/31/22 03:41	5
Oil Range Organics (Over C28-C36)	4760		250		mg/Kg		07/29/22 08:50	07/31/22 03:41	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*07/29/22 08:50*	*07/31/22 03:41*	*5*
o-Terphenyl	*349*	*S1+*	*70 - 130*	*07/29/22 08:50*	*07/31/22 03:41*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4930		50.0		mg/Kg			07/30/22 22:25	10

Client Sample ID: SS02

Lab Sample ID: 890-2653-2
Matrix: Solid
Date Collected: 07/26/22 09:05
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0499	U *- *1	0.0499		mg/Kg		08/02/22 14:44	08/04/22 00:59	25
Toluene	0.109	*- *1	0.0499		mg/Kg		08/02/22 14:44	08/04/22 00:59	25
Ethylbenzene	0.574	*- *1	0.0499		mg/Kg		08/02/22 14:44	08/04/22 00:59	25
m-Xylene & p-Xylene	0.836	*- *1	0.0998		mg/Kg		08/02/22 14:44	08/04/22 00:59	25
o-Xylene	0.458	*+ *1	0.0499		mg/Kg		08/02/22 14:44	08/04/22 00:59	25
Xylenes, Total	1.29	*1	0.0998		mg/Kg		08/02/22 14:44	08/04/22 00:59	25

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Client Sample ID: SS02

Lab Sample ID: 890-2653-2
Matrix: Solid
Date Collected: 07/26/22 09:05
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	186	S1+	70 - 130	08/02/22 14:44	08/04/22 00:59	25
1,4-Difluorobenzene (Surr)	94		70 - 130	08/02/22 14:44	08/04/22 00:59	25

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	1.98		0.0998		mg/Kg			08/04/22 09:41	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	12500		250		mg/Kg			07/31/22 10:38	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	1050		250		mg/Kg		07/29/22 08:50	07/31/22 04:00	5
Diesel Range Organics (Over C10-C28)	9700		250		mg/Kg		07/29/22 08:50	07/31/22 04:00	5
Oil Range Organics (Over C28-C36)	1720		250		mg/Kg		07/29/22 08:50	07/31/22 04:00	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	07/29/22 08:50	07/31/22 04:00	5
o-Terphenyl	162	S1+	70 - 130	07/29/22 08:50	07/31/22 04:00	5

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1650		25.0		mg/Kg			07/30/22 22:48	5

Client Sample ID: SS03

Lab Sample ID: 890-2653-3
Matrix: Solid
Date Collected: 07/26/22 09:10
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0497	U *- *1	0.0497		mg/Kg		08/02/22 14:44	08/04/22 01:19	25
Toluene	0.594	*- *1	0.0497		mg/Kg		08/02/22 14:44	08/04/22 01:19	25
Ethylbenzene	3.66	*- *1	0.0497		mg/Kg		08/02/22 14:44	08/04/22 01:19	25
m-Xylene & p-Xylene	8.72	*- *1	0.0994		mg/Kg		08/02/22 14:44	08/04/22 01:19	25
o-Xylene	0.276	*+ *1	0.0497		mg/Kg		08/02/22 14:44	08/04/22 01:19	25
Xylenes, Total	9.00	*1	0.0994		mg/Kg		08/02/22 14:44	08/04/22 01:19	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	08/02/22 14:44	08/04/22 01:19	25
1,4-Difluorobenzene (Surr)	90		70 - 130	08/02/22 14:44	08/04/22 01:19	25

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	13.3		0.0994		mg/Kg			08/04/22 09:41	1

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Client Sample ID: SS03

Date Collected: 07/26/22 09:10
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Lab Sample ID: 890-2653-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	12400		249		mg/Kg			07/31/22 10:38	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	1000		249		mg/Kg		07/29/22 08:50	07/31/22 04:20	5
Diesel Range Organics (Over C10-C28)	9420		249		mg/Kg		07/29/22 08:50	07/31/22 04:20	5
Oil Range Organics (Over C28-C36)	1960		249		mg/Kg		07/29/22 08:50	07/31/22 04:20	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*07/29/22 08:50*	*07/31/22 04:20*	*5*
o-Terphenyl	*178*	*S1+*	*70 - 130*	*07/29/22 08:50*	*07/31/22 04:20*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	188		5.05		mg/Kg			07/30/22 22:56	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) BFB1 (70-130)	DFBZ1 (70-130)
880-17728-A-1-A MS	Matrix Spike	105	97
880-17728-A-1-B MSD	Matrix Spike Duplicate	102	97
890-2653-1	SS01	139 S1+	110
890-2653-2	SS02	186 S1+	94
890-2653-3	SS03	117	90
890-2656-A-1-F MS	Matrix Spike	104	96
890-2656-A-1-G MSD	Matrix Spike Duplicate	106	93
LCS 880-31337/1-A	Lab Control Sample	113	93
LCS 880-31465/1-A	Lab Control Sample	103	94
LCSD 880-31337/2-A	Lab Control Sample Dup	90	87
LCSD 880-31465/2-A	Lab Control Sample Dup	106	97
MB 880-31323/5-A	Method Blank	106	87
MB 880-31337/5-A	Method Blank	99	87
MB 880-31465/5-A	Method Blank	100	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) 1CO1 (70-130)	OTPH1 (70-130)
890-2646-A-1-B MS	Matrix Spike	87	84
890-2646-A-1-C MSD	Matrix Spike Duplicate	87	84
890-2653-1	SS01	107	349 S1+
890-2653-2	SS02	98	162 S1+
890-2653-3	SS03	106	178 S1+
LCS 880-30965/2-A	Lab Control Sample	101	102
LCSD 880-30965/3-A	Lab Control Sample Dup	93	93
MB 880-30965/1-A	Method Blank	91	101

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31323/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31323

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*

Lab Sample ID: MB 880-31337/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31337

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*

Lab Sample ID: LCS 880-31337/1-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09999		mg/Kg		100	70 - 130		
Toluene			0.100	0.1031		mg/Kg		103	70 - 130		
Ethylbenzene			0.100	0.1082		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2220		mg/Kg		111	70 - 130		
o-Xylene			0.100	0.1387	*+	mg/Kg		139	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0998	0.05262	*- *1	mg/Kg		53	70 - 130	62	35

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

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

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.0998	0.06071	*- *1	mg/Kg		61	70 - 130	52	35
Ethylbenzene			0.0998	0.06794	*- *1	mg/Kg		68	70 - 130	46	35
m-Xylene & p-Xylene			0.200	0.1297	*- *1	mg/Kg		65	70 - 130	52	35
o-Xylene			0.0998	0.09111	*1	mg/Kg		91	70 - 130	41	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*

Lab Sample ID: 890-2656-A-1-F MS
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 31337

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U *- *1	0.101	0.08722		mg/Kg		87	70 - 130
Toluene	<0.00199	U *- *1	0.101	0.08202		mg/Kg		82	70 - 130
Ethylbenzene	<0.00199	U *- *1	0.101	0.08158		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00398	U *- *1	0.201	0.1625		mg/Kg		81	70 - 130
o-Xylene	<0.00199	U *+ *1	0.101	0.09304		mg/Kg		92	70 - 130

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

Lab Sample ID: 890-2656-A-1-G MSD
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 31337

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U *- *1	0.0998	0.09326		mg/Kg		93	70 - 130	7	35
Toluene	<0.00199	U *- *1	0.0998	0.08591		mg/Kg		86	70 - 130	5	35
Ethylbenzene	<0.00199	U *- *1	0.0998	0.08696		mg/Kg		87	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U *- *1	0.200	0.1684		mg/Kg		84	70 - 130	4	35
o-Xylene	<0.00199	U *+ *1	0.0998	0.09635		mg/Kg		97	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: MB 880-31465/5-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31465

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/04/22 08:51	08/04/22 10:53	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-31465/5-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31465

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/04/22 08:51	08/04/22 10:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/04/22 08:51	08/04/22 10:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*08/04/22 08:51*	*08/04/22 10:53*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*08/04/22 08:51*	*08/04/22 10:53*	*1*

Lab Sample ID: LCS 880-31465/1-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31465

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09988		mg/Kg		100	70 - 130		
Toluene			0.100	0.1006		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.1038		mg/Kg		104	70 - 130		
m-Xylene & p-Xylene			0.200	0.2107		mg/Kg		105	70 - 130		
o-Xylene			0.100	0.1145		mg/Kg		114	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: LCSD 880-31465/2-A
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31465

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09085		mg/Kg		91	70 - 130	9	35
Toluene			0.100	0.08782		mg/Kg		88	70 - 130	14	35
Ethylbenzene			0.100	0.09053		mg/Kg		91	70 - 130	14	35
m-Xylene & p-Xylene			0.200	0.1832		mg/Kg		92	70 - 130	14	35
o-Xylene			0.100	0.1004		mg/Kg		100	70 - 130	13	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 880-17728-A-1-A MS
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 31465

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U	0.100	0.08136		mg/Kg		81	70 - 130		
Toluene	<0.00200	U	0.100	0.07618		mg/Kg		76	70 - 130		
Ethylbenzene	<0.00200	U F1	0.100	0.07372		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1469		mg/Kg		73	70 - 130		
o-Xylene	<0.00200	U	0.100	0.07974		mg/Kg		80	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

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

Lab Sample ID: 880-17728-A-1-A MS
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 31465

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

Lab Sample ID: 880-17728-A-1-B MSD
Matrix: Solid
Analysis Batch: 31452

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 31465

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	0.08732		mg/Kg		87	70 - 130	7	35
Toluene	<0.00200	U	0.0998	0.07748		mg/Kg		78	70 - 130	2	35
Ethylbenzene	<0.00200	U F1	0.0998	0.06936	F1	mg/Kg		69	70 - 130	6	35
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1380	F1	mg/Kg		69	70 - 130	6	35
o-Xylene	<0.00200	U	0.0998	0.07575		mg/Kg		76	70 - 130	5	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

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

Lab Sample ID: MB 880-30965/1-A
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30965

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 08:50	07/30/22 19:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:50	07/30/22 19:51	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:50	07/30/22 19:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130	07/29/22 08:50	07/30/22 19:51	1
o-Terphenyl	101		70 - 130	07/29/22 08:50	07/30/22 19:51	1

Lab Sample ID: LCS 880-30965/2-A
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30965

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1058		mg/Kg		106	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1040		mg/Kg		104	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	102		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

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

Lab Sample ID: LCSD 880-30965/3-A
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30965

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	949.7		mg/Kg		95	70 - 130	11	20
Diesel Range Organics (Over C10-C28)			1000	972.0		mg/Kg		97	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*93*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

Lab Sample ID: 890-2646-A-1-B MS
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30965

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	1211		mg/Kg		116	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	999	846.5		mg/Kg		85	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

Lab Sample ID: 890-2646-A-1-C MSD
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30965

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	1295		mg/Kg		125	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	863.7		mg/Kg		86	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30913/1-A
Matrix: Solid
Analysis Batch: 31002

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			07/30/22 22:01	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-30913/2-A
Matrix: Solid
Analysis Batch: 31002

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	261.9		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-30913/3-A
Matrix: Solid
Analysis Batch: 31002

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	267.7		mg/Kg		107	90 - 110	2	20

Lab Sample ID: 890-2653-1 MS
Matrix: Solid
Analysis Batch: 31002

Client Sample ID: SS01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	4930		2500	7650		mg/Kg		109	90 - 110		

Lab Sample ID: 890-2653-1 MSD
Matrix: Solid
Analysis Batch: 31002

Client Sample ID: SS01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	4930		2500	7677		mg/Kg		110	90 - 110	0	20

Lab Sample ID: 890-2659-A-1-B MS
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.1		mg/Kg		92	90 - 110		

Lab Sample ID: 890-2659-A-1-C MSD
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.6		mg/Kg		92	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

GC VOA

Prep Batch: 31323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31323/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-2	SS02	Total/NA	Solid	5035	
890-2653-3	SS03	Total/NA	Solid	5035	
MB 880-31337/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-2	SS02	Total/NA	Solid	8021B	31337
890-2653-3	SS03	Total/NA	Solid	8021B	31337
MB 880-31323/5-A	Method Blank	Total/NA	Solid	8021B	31323
MB 880-31337/5-A	Method Blank	Total/NA	Solid	8021B	31337
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	8021B	31337
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31337
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	31337
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31337

Analysis Batch: 31452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Total/NA	Solid	8021B	31465
MB 880-31465/5-A	Method Blank	Total/NA	Solid	8021B	31465
LCS 880-31465/1-A	Lab Control Sample	Total/NA	Solid	8021B	31465
LCSD 880-31465/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31465
880-17728-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	31465
880-17728-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31465

Prep Batch: 31465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Total/NA	Solid	5035	
MB 880-31465/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31465/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31465/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17728-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-17728-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Total/NA	Solid	Total BTEX	
890-2653-2	SS02	Total/NA	Solid	Total BTEX	
890-2653-3	SS03	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

GC Semi VOA

Prep Batch: 30965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Total/NA	Solid	8015NM Prep	
890-2653-2	SS02	Total/NA	Solid	8015NM Prep	
890-2653-3	SS03	Total/NA	Solid	8015NM Prep	
MB 880-30965/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30965/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30965/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2646-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2646-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Total/NA	Solid	8015B NM	30965
890-2653-2	SS02	Total/NA	Solid	8015B NM	30965
890-2653-3	SS03	Total/NA	Solid	8015B NM	30965
MB 880-30965/1-A	Method Blank	Total/NA	Solid	8015B NM	30965
LCS 880-30965/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30965
LCSD 880-30965/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30965
890-2646-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	30965
890-2646-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30965

Analysis Batch: 31125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Total/NA	Solid	8015 NM	
890-2653-2	SS02	Total/NA	Solid	8015 NM	
890-2653-3	SS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Soluble	Solid	DI Leach	
890-2653-2	SS02	Soluble	Solid	DI Leach	
890-2653-3	SS03	Soluble	Solid	DI Leach	
MB 880-30913/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2653-1 MS	SS01	Soluble	Solid	DI Leach	
890-2653-1 MSD	SS01	Soluble	Solid	DI Leach	
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2653-1	SS01	Soluble	Solid	300.0	30913
890-2653-2	SS02	Soluble	Solid	300.0	30913
890-2653-3	SS03	Soluble	Solid	300.0	30913
MB 880-30913/1-A	Method Blank	Soluble	Solid	300.0	30913
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	300.0	30913
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30913
890-2653-1 MS	SS01	Soluble	Solid	300.0	30913
890-2653-1 MSD	SS01	Soluble	Solid	300.0	30913

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

HPLC/IC (Continued)

Analysis Batch: 31002 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Client Sample ID: SS01

Date Collected: 07/26/22 09:00
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2653-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	31465	08/04/22 08:51	MR	EETSC MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	31452	08/04/22 14:19	MR	EETSC MID
Total/NA	Analysis	Total BTEX		1			31483	08/04/22 09:41	SM	EETSC MID
Total/NA	Analysis	8015 NM		1			31125	07/31/22 10:38	AJ	EETSC MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30965	07/29/22 08:50	DM	EETSC MID
Total/NA	Analysis	8015B NM		5			31053	07/31/22 03:41	AJ	EETSC MID
Soluble	Leach	DI Leach			5 g	50 mL	30913	07/28/22 10:42	CH	EETSC MID
Soluble	Analysis	300.0		10			31002	07/30/22 22:25	SMC	EETSC MID

Client Sample ID: SS02

Date Collected: 07/26/22 09:05
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2653-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	31337	08/02/22 14:44	MR	EETSC MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	31375	08/04/22 00:59	MR	EETSC MID
Total/NA	Analysis	Total BTEX		1			31483	08/04/22 09:41	SM	EETSC MID
Total/NA	Analysis	8015 NM		1			31125	07/31/22 10:38	AJ	EETSC MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30965	07/29/22 08:50	DM	EETSC MID
Total/NA	Analysis	8015B NM		5			31053	07/31/22 04:00	AJ	EETSC MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30913	07/28/22 10:42	CH	EETSC MID
Soluble	Analysis	300.0		5			31002	07/30/22 22:48	SMC	EETSC MID

Client Sample ID: SS03

Date Collected: 07/26/22 09:10
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2653-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	31337	08/02/22 14:44	MR	EETSC MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	31375	08/04/22 01:19	MR	EETSC MID
Total/NA	Analysis	Total BTEX		1			31483	08/04/22 09:41	SM	EETSC MID
Total/NA	Analysis	8015 NM		1			31125	07/31/22 10:38	AJ	EETSC MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30965	07/29/22 08:50	DM	EETSC MID
Total/NA	Analysis	8015B NM		5			31053	07/31/22 04:20	AJ	EETSC MID
Soluble	Leach	DI Leach			4.95 g	50 mL	30913	07/28/22 10:42	CH	EETSC MID
Soluble	Analysis	300.0		1			31002	07/30/22 22:56	SMC	EETSC MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

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: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

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

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2653-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2653-1	SS01	Solid	07/26/22 09:00	07/26/22 16:02	0.5
890-2653-2	SS02	Solid	07/26/22 09:05	07/26/22 16:02	0.5
890-2653-3	SS03	Solid	07/26/22 09:10	07/26/22 16:02	0.5

Chain of Custody

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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

www.xenco.com

Work Order No: _____

Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	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:	JRU 108H	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558090	Due Date:	5 day TAT
Project Location:	Eddy County, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Liz Cheli		
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TWM-007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.4	
Total Containers:		Corrected Temperature:	4.2	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS01	S	7/26/2022	900	0.5	Comp	1		x	x	x
SS02	S	7/26/2022	905	0.5	Comp	1		x	x	x
SS03	S	7/26/2022	910	0.5	Comp	1		x	x	x

Parameters

ANALYSIS REQUEST

890-2653 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: nAPP2217931599

Cost Center: 1139071001

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.26.22 1600	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2653-1
SDG Number: Eddy County NM

Login Number: 2653
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: 890-2653-1
SDG Number: Eddy County NM

Login Number: 2653
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/28/22 10:13 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2655-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
8/5/2022 12:32:51 PM

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-2655-1
SDG: Eddy County NM

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Job ID: 890-2655-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2655-1

Receipt
The sample was received on 7/26/2022 4:02 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-31414 and analytical batch 880-31453 was outside control limits. Sample matrix interference is suspected.

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: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Client Sample ID: SS04

Date Collected: 07/26/22 09:30
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Lab Sample ID: 890-2655-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *1 F1 F2	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:29	1
Toluene	<0.00200	U F1 F2	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:29	1
Ethylbenzene	<0.00200	U F1 F2	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:29	1
m-Xylene & p-Xylene	<0.00401	U *- F1 F2	0.00401		mg/Kg		08/03/22 11:41	08/04/22 23:29	1
o-Xylene	<0.00200	U F1	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:29	1
Xylenes, Total	<0.00401	U *- F1 F2	0.00401		mg/Kg		08/03/22 11:41	08/04/22 23:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*08/03/22 11:41*	*08/04/22 23:29*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*08/03/22 11:41*	*08/04/22 23:29*	*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			08/05/22 13:19	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			07/31/22 10:38	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		07/29/22 08:50	07/31/22 03:21	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:50	07/31/22 03:21	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:50	07/31/22 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*07/29/22 08:50*	*07/31/22 03:21*	*1*
o-Terphenyl	*92*		*70 - 130*	*07/29/22 08:50*	*07/31/22 03:21*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**131**		5.00		mg/Kg			07/30/22 23:43	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2655-1	SS04	123	108										
890-2655-1 MS	SS04	98	102										
890-2655-1 MSD	SS04	111	102										
LCS 880-31414/1-A	Lab Control Sample	80	120										
LCSD 880-31414/2-A	Lab Control Sample Dup	81	107										
MB 880-31200/5-A	Method Blank	82	106										
MB 880-31414/5-A	Method Blank	83	105										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2646-A-1-B MS	Matrix Spike	87	84										
890-2646-A-1-C MSD	Matrix Spike Duplicate	87	84										
890-2655-1	SS04	84	92										
LCS 880-30965/2-A	Lab Control Sample	101	102										
LCSD 880-30965/3-A	Lab Control Sample Dup	93	93										
MB 880-30965/1-A	Method Blank	91	101										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31200/5-A
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31200

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/01/22 14:58	08/04/22 10:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/01/22 14:58	08/04/22 10:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/01/22 14:58	08/04/22 10:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/01/22 14:58	08/04/22 10:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/01/22 14:58	08/04/22 10:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/01/22 14:58	08/04/22 10:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*08/01/22 14:58*	*08/04/22 10:53*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*08/01/22 14:58*	*08/04/22 10:53*	*1*

Lab Sample ID: MB 880-31414/5-A
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31414

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:07	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/03/22 11:41	08/04/22 23:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/03/22 11:41	08/04/22 23:07	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/03/22 11:41	08/04/22 23:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*	*08/03/22 11:41*	*08/04/22 23:07*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*08/03/22 11:41*	*08/04/22 23:07*	*1*

Lab Sample ID: LCS 880-31414/1-A
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31414

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1214		mg/Kg		121	70 - 130		
Toluene			0.100	0.09865		mg/Kg		99	70 - 130		
Ethylbenzene			0.100	0.09199		mg/Kg		92	70 - 130		
m-Xylene & p-Xylene			0.200	0.07945	*-	mg/Kg		40	70 - 130		
o-Xylene			0.100	0.08730		mg/Kg		87	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*

Lab Sample ID: LCSD 880-31414/2-A
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31414

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07448	*1	mg/Kg		74	70 - 130	48	35

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

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

Lab Sample ID: LCSD 880-31414/2-A
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31414

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.07311		mg/Kg		73	70 - 130	30	35
Ethylbenzene			0.100	0.07141		mg/Kg		71	70 - 130	25	35
m-Xylene & p-Xylene			0.200	0.06955	*-	mg/Kg		35	70 - 130	13	35
o-Xylene			0.100	0.07107		mg/Kg		71	70 - 130	21	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-2655-1 MS
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: SS04
Prep Type: Total/NA
Prep Batch: 31414

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U *1 F1 F2	0.101	0.05843	F1	mg/Kg		58	70 - 130
Toluene	<0.00200	U F1 F2	0.101	0.05184	F1	mg/Kg		52	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.101	0.05405	F1	mg/Kg		54	70 - 130
m-Xylene & p-Xylene	<0.00401	U *- F1 F2	0.201	0.1046	F1	mg/Kg		52	70 - 130
o-Xylene	<0.00200	U F1	0.101	0.05325	F1	mg/Kg		53	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 890-2655-1 MSD
Matrix: Solid
Analysis Batch: 31453

Client Sample ID: SS04
Prep Type: Total/NA
Prep Batch: 31414

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U *1 F1 F2	0.0990	0.03449	F1 F2	mg/Kg		35	70 - 130	52	35
Toluene	<0.00200	U F1 F2	0.0990	0.03593	F1 F2	mg/Kg		36	70 - 130	36	35
Ethylbenzene	<0.00200	U F1 F2	0.0990	0.03345	F1 F2	mg/Kg		34	70 - 130	47	35
m-Xylene & p-Xylene	<0.00401	U *- F1 F2	0.198	0.07182	F1 F2	mg/Kg		36	70 - 130	37	35
o-Xylene	<0.00200	U F1	0.0990	0.03786	F1	mg/Kg		38	70 - 130	34	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30965/1-A
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30965

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 08:50	07/30/22 19:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:50	07/30/22 19:51	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:50	07/30/22 19:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*07/29/22 08:50*	*07/30/22 19:51*	*1*
o-Terphenyl	*101*		*70 - 130*	*07/29/22 08:50*	*07/30/22 19:51*	*1*

Lab Sample ID: LCS 880-30965/2-A
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30965

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1058		mg/Kg		106	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1040		mg/Kg		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: LCSD 880-30965/3-A
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30965

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	949.7		mg/Kg		95	70 - 130	11	20
Diesel Range Organics (Over C10-C28)			1000	972.0		mg/Kg		97	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*93*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

Lab Sample ID: 890-2646-A-1-B MS
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30965

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	1211		mg/Kg		116	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	846.5		mg/Kg		85	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2646-A-1-B MS
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30965

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	84		70 - 130

Lab Sample ID: 890-2646-A-1-C MSD
Matrix: Solid
Analysis Batch: 31053

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30965

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	1295		mg/Kg		125	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	863.7		mg/Kg		86	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	84		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30913/1-A
Matrix: Solid
Analysis Batch: 31002

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			07/30/22 22:01	1

Lab Sample ID: LCS 880-30913/2-A
Matrix: Solid
Analysis Batch: 31002

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	261.9		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-30913/3-A
Matrix: Solid
Analysis Batch: 31002

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	267.7		mg/Kg		107	90 - 110	2	20

Lab Sample ID: 890-2653-A-1-B MS
Matrix: Solid
Analysis Batch: 31002

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	4930		2500	7650		mg/Kg		109	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2653-A-1-C MSD
Matrix: Solid
Analysis Batch: 31002

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	4930		2500	7677		mg/Kg		110	90 - 110	0	20

Lab Sample ID: 890-2659-A-1-B MS
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.1		mg/Kg		92	90 - 110

Lab Sample ID: 890-2659-A-1-C MSD
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.6		mg/Kg		92	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

GC VOA

Prep Batch: 31200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31200/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Total/NA	Solid	5035	
MB 880-31414/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31414/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31414/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2655-1 MS	SS04	Total/NA	Solid	5035	
890-2655-1 MSD	SS04	Total/NA	Solid	5035	

Analysis Batch: 31453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Total/NA	Solid	8021B	31414
MB 880-31200/5-A	Method Blank	Total/NA	Solid	8021B	31200
MB 880-31414/5-A	Method Blank	Total/NA	Solid	8021B	31414
LCS 880-31414/1-A	Lab Control Sample	Total/NA	Solid	8021B	31414
LCSD 880-31414/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31414
890-2655-1 MS	SS04	Total/NA	Solid	8021B	31414
890-2655-1 MSD	SS04	Total/NA	Solid	8021B	31414

Analysis Batch: 31592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 30965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-30965/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30965/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30965/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2646-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2646-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Total/NA	Solid	8015B NM	30965
MB 880-30965/1-A	Method Blank	Total/NA	Solid	8015B NM	30965
LCS 880-30965/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30965
LCSD 880-30965/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30965
890-2646-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	30965
890-2646-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30965

Analysis Batch: 31124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 30913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Soluble	Solid	DI Leach	
MB 880-30913/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2655-1	SS04	Soluble	Solid	300.0	30913
MB 880-30913/1-A	Method Blank	Soluble	Solid	300.0	30913
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	300.0	30913
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30913
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Client Sample ID: SS04

Date Collected: 07/26/22 09:30
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2655-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	31414	08/03/22 11:41	MR	EETSC MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31453	08/04/22 23:29	MR	EETSC MID
Total/NA	Analysis	Total BTEX		1			31592	08/05/22 13:19	AJ	EETSC MID
Total/NA	Analysis	8015 NM		1			31124	07/31/22 10:38	AJ	EETSC MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30965	07/29/22 08:50	DM	EETSC MID
Total/NA	Analysis	8015B NM		1			31053	07/31/22 03:21	AJ	EETSC MID
Soluble	Leach	DI Leach			5 g	50 mL	30913	07/28/22 10:42	CH	EETSC MID
Soluble	Analysis	300.0		1			31002	07/30/22 23:43	SMC	EETSC MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

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: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

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

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2655-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2655-1	SS04	Solid	07/26/22 09:30	07/26/22 16:02	0.5

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	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:	JRU 108H	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558090	Due Date:	5 day TAT
Project Location:	Eddy County, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Liz Cheli		
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TM-007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.4	
Total Containers:		Corrected Temperature:	4.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
SS04	S	7/26/2022	930	0.5	Comp	1		x	x	x

Preservative Codes

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

Sample Comments

Incident ID: nAPP2217931599

Cost Center: 1139071001

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.26.22 1602	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2655-1
SDG Number: Eddy County NM

Login Number: 2655
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: 890-2655-1
SDG Number: Eddy County NM

Login Number: 2655
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/28/22 10:13 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2656-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
8/4/2022 10:57:48 AM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-2656-1
SDG: 03E1558090

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Job ID: 890-2656-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2656-1

Receipt
The sample was received on 7/26/2022 4:02 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

GC VOA
Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-31337 and analytical batch 880-31375 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30966 and analytical batch 880-31081 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-30966/2-A). Evidence of matrix interferences is not obvious.

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

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Client Sample ID: SS05

Date Collected: 07/26/22 09:25
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Lab Sample ID: 890-2656-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *- *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:15	1
Toluene	<0.00199	U *- *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:15	1
Ethylbenzene	<0.00199	U *- *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:15	1
m-Xylene & p-Xylene	<0.00398	U *- *1	0.00398		mg/Kg		08/02/22 14:44	08/03/22 22:15	1
o-Xylene	<0.00199	U *+ *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:15	1
Xylenes, Total	<0.00398	U *1	0.00398		mg/Kg		08/02/22 14:44	08/03/22 22:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*08/02/22 14:44*	*08/03/22 22:15*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*08/02/22 14:44*	*08/03/22 22:15*	*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			08/04/22 09:41	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**62.8**		49.8		mg/Kg			08/01/22 15:09	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		07/29/22 08:55	07/31/22 13:23	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		07/29/22 08:55	07/31/22 13:23	1
Oil Range Organics (Over C28-C36)	**62.8**		49.8		mg/Kg		07/29/22 08:55	07/31/22 13:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*07/29/22 08:55*	*07/31/22 13:23*	*1*
o-Terphenyl	*121*		*70 - 130*	*07/29/22 08:55*	*07/31/22 13:23*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13.6**		4.95		mg/Kg			07/30/22 23:51	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

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)										
890-2656-1	SS05	106	96										
890-2656-1 MS	SS05	104	96										
890-2656-1 MSD	SS05	106	93										
LCS 880-31337/1-A	Lab Control Sample	113	93										
LCSD 880-31337/2-A	Lab Control Sample Dup	90	87										
MB 880-31323/5-A	Method Blank	106	87										
MB 880-31337/5-A	Method Blank	99	87										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)										
890-2654-A-1-C MS	Matrix Spike	102	110										
890-2654-A-1-D MSD	Matrix Spike Duplicate	99	106										
890-2656-1	SS05	97	121										
LCS 880-30966/2-A	Lab Control Sample	123	137 S1+										
LCSD 880-30966/3-A	Lab Control Sample Dup	107	121										
MB 880-30966/1-A	Method Blank	106	138 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31323/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31323

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*

Lab Sample ID: MB 880-31337/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31337

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*

Lab Sample ID: LCS 880-31337/1-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09999		mg/Kg		100	70 - 130		
Toluene			0.100	0.1031		mg/Kg		103	70 - 130		
Ethylbenzene			0.100	0.1082		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2220		mg/Kg		111	70 - 130		
o-Xylene			0.100	0.1387	*+	mg/Kg		139	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0998	0.05262	*- *1	mg/Kg		53	70 - 130	62	35

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

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

Lab Sample ID: LCSD 880-31337/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31375 — **Prep Batch: 31337**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.0998	0.06071	*- *1	mg/Kg		61	70 - 130	52	35
Ethylbenzene			0.0998	0.06794	*- *1	mg/Kg		68	70 - 130	46	35
m-Xylene & p-Xylene			0.200	0.1297	*- *1	mg/Kg		65	70 - 130	52	35
o-Xylene			0.0998	0.09111	*1	mg/Kg		91	70 - 130	41	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*

Lab Sample ID: 890-2656-1 MS — **Client Sample ID: SS05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31375 — **Prep Batch: 31337**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U *- *1	0.101	0.08722		mg/Kg		87	70 - 130
Toluene	<0.00199	U *- *1	0.101	0.08202		mg/Kg		82	70 - 130
Ethylbenzene	<0.00199	U *- *1	0.101	0.08158		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00398	U *- *1	0.201	0.1625		mg/Kg		81	70 - 130
o-Xylene	<0.00199	U *+ *1	0.101	0.09304		mg/Kg		92	70 - 130

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

Lab Sample ID: 890-2656-1 MSD — **Client Sample ID: SS05**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31375 — **Prep Batch: 31337**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U *- *1	0.0998	0.09326		mg/Kg		93	70 - 130	7	35
Toluene	<0.00199	U *- *1	0.0998	0.08591		mg/Kg		86	70 - 130	5	35
Ethylbenzene	<0.00199	U *- *1	0.0998	0.08696		mg/Kg		87	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U *- *1	0.200	0.1684		mg/Kg		84	70 - 130	4	35
o-Xylene	<0.00199	U *+ *1	0.0998	0.09635		mg/Kg		97	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

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

Lab Sample ID: MB 880-30966/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

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 08:55	07/31/22 10:35	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-30966/1-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30966

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 10:35	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*07/29/22 08:55*	*07/31/22 10:35*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*07/29/22 08:55*	*07/31/22 10:35*	*1*

Lab Sample ID: LCS 880-30966/2-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30966

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1127		mg/Kg		113	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1195		mg/Kg		120	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*
o-Terphenyl	*137*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-30966/3-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30966

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1048		mg/Kg		105	70 - 130	7	20
Diesel Range Organics (Over C10-C28)			1000	1111		mg/Kg		111	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*121*		*70 - 130*

Lab Sample ID: 890-2654-A-1-C MS
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30966

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	1120		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	993.9		mg/Kg		96	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*102*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

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

Lab Sample ID: 890-2654-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

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	1143		mg/Kg		111	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	989.3		mg/Kg		96	70 - 130	0	20

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30913/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/30/22 22:01	1

Lab Sample ID: LCS 880-30913/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	261.9		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-30913/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	267.7		mg/Kg		107	90 - 110	2	20

Lab Sample ID: 890-2653-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	4930		2500	7650		mg/Kg		109	90 - 110		

Lab Sample ID: 890-2653-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	4930		2500	7677		mg/Kg		110	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2659-A-1-B MS
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.1		mg/Kg		92	90 - 110

Lab Sample ID: 890-2659-A-1-C MSD
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.6		mg/Kg		92	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

GC VOA

Prep Batch: 31323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31323/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Total/NA	Solid	5035	
MB 880-31337/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2656-1 MS	SS05	Total/NA	Solid	5035	
890-2656-1 MSD	SS05	Total/NA	Solid	5035	

Analysis Batch: 31375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Total/NA	Solid	8021B	31337
MB 880-31323/5-A	Method Blank	Total/NA	Solid	8021B	31323
MB 880-31337/5-A	Method Blank	Total/NA	Solid	8021B	31337
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	8021B	31337
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31337
890-2656-1 MS	SS05	Total/NA	Solid	8021B	31337
890-2656-1 MSD	SS05	Total/NA	Solid	8021B	31337

Analysis Batch: 31477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 30966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Total/NA	Solid	8015NM Prep	
MB 880-30966/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30966/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30966/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2654-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2654-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Total/NA	Solid	8015B NM	30966
MB 880-30966/1-A	Method Blank	Total/NA	Solid	8015B NM	30966
LCS 880-30966/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30966
LCSD 880-30966/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30966
890-2654-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	30966
890-2654-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30966

Analysis Batch: 31203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

HPLC/IC

Leach Batch: 30913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Soluble	Solid	DI Leach	
MB 880-30913/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2656-1	SS05	Soluble	Solid	300.0	30913
MB 880-30913/1-A	Method Blank	Soluble	Solid	300.0	30913
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	300.0	30913
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30913
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Client Sample ID: SS05

Date Collected: 07/26/22 09:25
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2656-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	31337	08/02/22 14:44	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31375	08/03/22 22:15	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			31477	08/04/22 09:41	SM	XEN MID
Total/NA	Analysis	8015 NM		1			31203	08/01/22 15:09	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30966	07/29/22 08:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			31081	07/31/22 13:23	SM	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	30913	07/28/22 10:42	CH	XEN MID
Soluble	Analysis	300.0		1			31002	07/30/22 23:51	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: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-2656-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2656-1	SS05	Solid	07/26/22 09:25	07/26/22 16:02	0.5

Chain of Custody

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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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, 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:	JRU 108H	Turn Around	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	5 day TAT
Sampler's Name:	Liz Cheli	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	IR#-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.4	
Total Containers:		Corrected Temperature:	4.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
SS05	S	7/26/2022	925	0.5	Comp	1		x	x	x

890-2656 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: nAPP2217931599

Cost Center: 1139071001

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.26.22 1600			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2656-1
SDG Number: 03E1558090

Login Number: 2656
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: 890-2656-1
SDG Number: 03E1558090

Login Number: 2656
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/28/22 10:13 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2657-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
8/4/2022 10:57:48 AM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-2657-1
SDG: Eddy County NM

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Job ID: 890-2657-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2657-1

Receipt
The sample was received on 7/26/2022 4:02 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

GC VOA
Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-31337 and analytical batch 880-31375 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30966 and analytical batch 880-31081 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-30966/2-A). Evidence of matrix interferences is not obvious.

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

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Client Sample ID: SS06

Date Collected: 07/26/22 09:32
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Lab Sample ID: 890-2657-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *- *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:56	1
Toluene	<0.00199	U *- *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:56	1
Ethylbenzene	<0.00199	U *- *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:56	1
m-Xylene & p-Xylene	<0.00398	U *- *1	0.00398		mg/Kg		08/02/22 14:44	08/03/22 22:56	1
o-Xylene	<0.00199	U *+ *1	0.00199		mg/Kg		08/02/22 14:44	08/03/22 22:56	1
Xylenes, Total	<0.00398	U *1	0.00398		mg/Kg		08/02/22 14:44	08/03/22 22:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*08/02/22 14:44*	*08/03/22 22:56*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*08/02/22 14:44*	*08/03/22 22:56*	*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			08/04/22 09:41	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			08/01/22 15:09	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		07/29/22 08:55	07/31/22 13:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 13:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*07/29/22 08:55*	*07/31/22 13:44*	*1*
o-Terphenyl	*117*		*70 - 130*	*07/29/22 08:55*	*07/31/22 13:44*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10.9**		5.05		mg/Kg			07/30/22 23:59	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2656-A-1-F MS	Matrix Spike	104	96										
890-2656-A-1-G MSD	Matrix Spike Duplicate	106	93										
890-2657-1	SS06	107	92										
LCS 880-31337/1-A	Lab Control Sample	113	93										
LCSD 880-31337/2-A	Lab Control Sample Dup	90	87										
MB 880-31323/5-A	Method Blank	106	87										
MB 880-31337/5-A	Method Blank	99	87										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2654-A-1-C MS	Matrix Spike	102	110										
890-2654-A-1-D MSD	Matrix Spike Duplicate	99	106										
890-2657-1	SS06	95	117										
LCS 880-30966/2-A	Lab Control Sample	123	137 S1+										
LCSD 880-30966/3-A	Lab Control Sample Dup	107	121										
MB 880-30966/1-A	Method Blank	106	138 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31323/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31323

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*

Lab Sample ID: MB 880-31337/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31337

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*

Lab Sample ID: LCS 880-31337/1-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09999		mg/Kg		100	70 - 130		
Toluene			0.100	0.1031		mg/Kg		103	70 - 130		
Ethylbenzene			0.100	0.1082		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2220		mg/Kg		111	70 - 130		
o-Xylene			0.100	0.1387	*+	mg/Kg		139	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0998	0.05262	*- *1	mg/Kg		53	70 - 130	62	35

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

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

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.0998	0.06071	*- *1	mg/Kg		61	70 - 130	52	35
Ethylbenzene			0.0998	0.06794	*- *1	mg/Kg		68	70 - 130	46	35
m-Xylene & p-Xylene			0.200	0.1297	*- *1	mg/Kg		65	70 - 130	52	35
o-Xylene			0.0998	0.09111	*1	mg/Kg		91	70 - 130	41	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*

Lab Sample ID: 890-2656-A-1-F MS
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 31337

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U *- *1	0.101	0.08722		mg/Kg		87	70 - 130
Toluene	<0.00199	U *- *1	0.101	0.08202		mg/Kg		82	70 - 130
Ethylbenzene	<0.00199	U *- *1	0.101	0.08158		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00398	U *- *1	0.201	0.1625		mg/Kg		81	70 - 130
o-Xylene	<0.00199	U *+ *1	0.101	0.09304		mg/Kg		92	70 - 130

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

Lab Sample ID: 890-2656-A-1-G MSD
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 31337

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U *- *1	0.0998	0.09326		mg/Kg		93	70 - 130	7	35
Toluene	<0.00199	U *- *1	0.0998	0.08591		mg/Kg		86	70 - 130	5	35
Ethylbenzene	<0.00199	U *- *1	0.0998	0.08696		mg/Kg		87	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U *- *1	0.200	0.1684		mg/Kg		84	70 - 130	4	35
o-Xylene	<0.00199	U *+ *1	0.0998	0.09635		mg/Kg		97	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

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

Lab Sample ID: MB 880-30966/1-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30966

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 08:55	07/31/22 10:35	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30966/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 10:35	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*07/29/22 08:55*	*07/31/22 10:35*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*07/29/22 08:55*	*07/31/22 10:35*	*1*

Lab Sample ID: LCS 880-30966/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1127		mg/Kg		113	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1195		mg/Kg		120	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*
o-Terphenyl	*137*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-30966/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1048		mg/Kg		105	70 - 130	7	20
Diesel Range Organics (Over C10-C28)			1000	1111		mg/Kg		111	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*121*		*70 - 130*

Lab Sample ID: 890-2654-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

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	1120		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	993.9		mg/Kg		96	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*102*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2654-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

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	1143		mg/Kg		111	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	989.3		mg/Kg		96	70 - 130	0	20

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30913/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/30/22 22:01	1

Lab Sample ID: LCS 880-30913/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	261.9		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-30913/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	267.7		mg/Kg		107	90 - 110	2	20

Lab Sample ID: 890-2653-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	4930		2500	7650		mg/Kg		109	90 - 110		

Lab Sample ID: 890-2653-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	4930		2500	7677		mg/Kg		110	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2659-A-1-B MS
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.1		mg/Kg		92	90 - 110

Lab Sample ID: 890-2659-A-1-C MSD
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.6		mg/Kg		92	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

GC VOA

Prep Batch: 31323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31323/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Total/NA	Solid	5035	
MB 880-31337/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Total/NA	Solid	8021B	31337
MB 880-31323/5-A	Method Blank	Total/NA	Solid	8021B	31323
MB 880-31337/5-A	Method Blank	Total/NA	Solid	8021B	31337
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	8021B	31337
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31337
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	31337
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31337

Analysis Batch: 31479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 30966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Total/NA	Solid	8015NM Prep	
MB 880-30966/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30966/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30966/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2654-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2654-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Total/NA	Solid	8015B NM	30966
MB 880-30966/1-A	Method Blank	Total/NA	Solid	8015B NM	30966
LCS 880-30966/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30966
LCSD 880-30966/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30966
890-2654-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	30966
890-2654-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30966

Analysis Batch: 31204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 30913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Soluble	Solid	DI Leach	
MB 880-30913/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2657-1	SS06	Soluble	Solid	300.0	30913
MB 880-30913/1-A	Method Blank	Soluble	Solid	300.0	30913
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	300.0	30913
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30913
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Client Sample ID: SS06

Date Collected: 07/26/22 09:32
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2657-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	31337	08/02/22 14:44	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31375	08/03/22 22:56	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			31479	08/04/22 09:41	SM	XEN MID
Total/NA	Analysis	8015 NM		1			31204	08/01/22 15:09	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30966	07/29/22 08:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			31081	07/31/22 13:44	SM	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	30913	07/28/22 10:42	CH	XEN MID
Soluble	Analysis	300.0		1			31002	07/30/22 23:59	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: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

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: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

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: JRU 108H

Job ID: 890-2657-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2657-1	SS06	Solid	07/26/22 09:32	07/26/22 16:02	0.5

Chain of Custody

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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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy, 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:	JRU 108H	**Turn Around**	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	5 day TAT
Sampler's Name:	Liz Cheli	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR#.007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.4
Total Containers:		Corrected Temperature:	4.2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
SS06	S	7/26/2022	932	0.5	Comp	1		x	x	x

890-2657 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID: nAPP2217931599

Cost Center: 1139071001

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.26.22 1602	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2657-1
SDG Number: Eddy County NM

Login Number: 2657
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: 890-2657-1
SDG Number: Eddy County NM

Login Number: 2657
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/28/22 10:13 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2658-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
8/4/2022 11:03:25 AM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-2658-1
SDG: Eddy County NM

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Job ID: 890-2658-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2658-1

Receipt
The sample was received on 7/26/2022 4:02 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

GC VOA
Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-31337 and analytical batch 880-31375 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-30966 and analytical batch 880-31081 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-30966/2-A). Evidence of matrix interferences is not obvious.

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

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Client Sample ID: SS07

Date Collected: 07/26/22 09:35
Date Received: 07/26/22 16:02
Sample Depth: 0.5

Lab Sample ID: 890-2658-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *- *1	0.00200		mg/Kg		08/02/22 14:44	08/03/22 23:16	1
Toluene	<0.00200	U *- *1	0.00200		mg/Kg		08/02/22 14:44	08/03/22 23:16	1
Ethylbenzene	<0.00200	U *- *1	0.00200		mg/Kg		08/02/22 14:44	08/03/22 23:16	1
m-Xylene & p-Xylene	<0.00401	U *- *1	0.00401		mg/Kg		08/02/22 14:44	08/03/22 23:16	1
o-Xylene	<0.00200	U *+ *1	0.00200		mg/Kg		08/02/22 14:44	08/03/22 23:16	1
Xylenes, Total	<0.00401	U *1	0.00401		mg/Kg		08/02/22 14:44	08/03/22 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*08/02/22 14:44*	*08/03/22 23:16*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*08/02/22 14:44*	*08/03/22 23:16*	*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			08/04/22 09:41	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			08/01/22 15:09	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		07/29/22 08:55	07/31/22 19:22	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 19:22	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*85*		*70 - 130*	*07/29/22 08:55*	*07/31/22 19:22*	*1*
o-Terphenyl	*108*		*70 - 130*	*07/29/22 08:55*	*07/31/22 19:22*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.70**		5.00		mg/Kg			07/31/22 00:07	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2656-A-1-F MS	Matrix Spike	104	96										
890-2656-A-1-G MSD	Matrix Spike Duplicate	106	93										
890-2658-1	SS07	110	96										
LCS 880-31337/1-A	Lab Control Sample	113	93										
LCSD 880-31337/2-A	Lab Control Sample Dup	90	87										
MB 880-31323/5-A	Method Blank	106	87										
MB 880-31337/5-A	Method Blank	99	87										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-2654-A-1-C MS	Matrix Spike	102	110										
890-2654-A-1-D MSD	Matrix Spike Duplicate	99	106										
890-2658-1	SS07	85	108										
LCS 880-30966/2-A	Lab Control Sample	123	137 S1+										
LCSD 880-30966/3-A	Lab Control Sample Dup	107	121										
MB 880-30966/1-A	Method Blank	106	138 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-31323/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31323

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 13:15	08/03/22 10:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 13:15	08/03/22 10:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 13:15*	*08/03/22 10:46*	*1*

Lab Sample ID: MB 880-31337/5-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 31337

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/02/22 14:44	08/03/22 21:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/02/22 14:44	08/03/22 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*08/02/22 14:44*	*08/03/22 21:53*	*1*

Lab Sample ID: LCS 880-31337/1-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09999		mg/Kg		100	70 - 130		
Toluene			0.100	0.1031		mg/Kg		103	70 - 130		
Ethylbenzene			0.100	0.1082		mg/Kg		108	70 - 130		
m-Xylene & p-Xylene			0.200	0.2220		mg/Kg		111	70 - 130		
o-Xylene			0.100	0.1387	*+	mg/Kg		139	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0998	0.05262	*- *1	mg/Kg		53	70 - 130	62	35

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

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

Lab Sample ID: LCSD 880-31337/2-A
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 31337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.0998	0.06071	*- *1	mg/Kg		61	70 - 130	52	35
Ethylbenzene			0.0998	0.06794	*- *1	mg/Kg		68	70 - 130	46	35
m-Xylene & p-Xylene			0.200	0.1297	*- *1	mg/Kg		65	70 - 130	52	35
o-Xylene			0.0998	0.09111	*1	mg/Kg		91	70 - 130	41	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*

Lab Sample ID: 890-2656-A-1-F MS
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 31337

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U *- *1	0.101	0.08722		mg/Kg		87	70 - 130
Toluene	<0.00199	U *- *1	0.101	0.08202		mg/Kg		82	70 - 130
Ethylbenzene	<0.00199	U *- *1	0.101	0.08158		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00398	U *- *1	0.201	0.1625		mg/Kg		81	70 - 130
o-Xylene	<0.00199	U *+ *1	0.101	0.09304		mg/Kg		92	70 - 130

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

Lab Sample ID: 890-2656-A-1-G MSD
Matrix: Solid
Analysis Batch: 31375

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 31337

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U *- *1	0.0998	0.09326		mg/Kg		93	70 - 130	7	35
Toluene	<0.00199	U *- *1	0.0998	0.08591		mg/Kg		86	70 - 130	5	35
Ethylbenzene	<0.00199	U *- *1	0.0998	0.08696		mg/Kg		87	70 - 130	6	35
m-Xylene & p-Xylene	<0.00398	U *- *1	0.200	0.1684		mg/Kg		84	70 - 130	4	35
o-Xylene	<0.00199	U *+ *1	0.0998	0.09635		mg/Kg		97	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

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

Lab Sample ID: MB 880-30966/1-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30966

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 08:55	07/31/22 10:35	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

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

Lab Sample ID: MB 880-30966/1-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30966

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 10:35	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/29/22 08:55	07/31/22 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*07/29/22 08:55*	*07/31/22 10:35*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*07/29/22 08:55*	*07/31/22 10:35*	*1*

Lab Sample ID: LCS 880-30966/2-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30966

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1127		mg/Kg		113	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1195		mg/Kg		120	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*
o-Terphenyl	*137*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-30966/3-A
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30966

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1048		mg/Kg		105	70 - 130	7	20
Diesel Range Organics (Over C10-C28)			1000	1111		mg/Kg		111	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*121*		*70 - 130*

Lab Sample ID: 890-2654-A-1-C MS
Matrix: Solid
Analysis Batch: 31081

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30966

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	1120		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	993.9		mg/Kg		96	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*102*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2654-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 31081 — **Prep Batch: 30966**

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	1143		mg/Kg		111	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	989.3		mg/Kg		96	70 - 130	0	20

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30913/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/30/22 22:01	1

Lab Sample ID: LCS 880-30913/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	261.9		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-30913/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	267.7		mg/Kg		107	90 - 110	2	20

Lab Sample ID: 890-2653-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	4930		2500	7650		mg/Kg		109	90 - 110		

Lab Sample ID: 890-2653-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 31002

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	4930		2500	7677		mg/Kg		110	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2659-A-1-B MS
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.1		mg/Kg		92	90 - 110

Lab Sample ID: 890-2659-A-1-C MSD
Matrix: Solid
Analysis Batch: 31002

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	149		250	378.6		mg/Kg		92	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

GC VOA

Prep Batch: 31323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-31323/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 31337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Total/NA	Solid	5035	
MB 880-31337/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 31375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Total/NA	Solid	8021B	31337
MB 880-31323/5-A	Method Blank	Total/NA	Solid	8021B	31323
MB 880-31337/5-A	Method Blank	Total/NA	Solid	8021B	31337
LCS 880-31337/1-A	Lab Control Sample	Total/NA	Solid	8021B	31337
LCSD 880-31337/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	31337
890-2656-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	31337
890-2656-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	31337

Analysis Batch: 31480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 30966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-30966/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30966/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30966/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2654-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2654-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 31081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Total/NA	Solid	8015B NM	30966
MB 880-30966/1-A	Method Blank	Total/NA	Solid	8015B NM	30966
LCS 880-30966/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30966
LCSD 880-30966/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30966
890-2654-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	30966
890-2654-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30966

Analysis Batch: 31206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 30913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Soluble	Solid	DI Leach	
MB 880-30913/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 31002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2658-1	SS07	Soluble	Solid	300.0	30913
MB 880-30913/1-A	Method Blank	Soluble	Solid	300.0	30913
LCS 880-30913/2-A	Lab Control Sample	Soluble	Solid	300.0	30913
LCSD 880-30913/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30913
890-2653-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2653-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913
890-2659-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	30913
890-2659-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30913

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Client Sample ID: SS07
Date Collected: 07/26/22 09:35
Date Received: 07/26/22 16:02

Lab Sample ID: 890-2658-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	31337	08/02/22 14:44	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	31375	08/03/22 23:16	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			31480	08/04/22 09:41	SM	XEN MID
Total/NA	Analysis	8015 NM		1			31206	08/01/22 15:09	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	30966	07/29/22 08:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			31081	07/31/22 19:22	SM	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30913	07/28/22 10:42	CH	XEN MID
Soluble	Analysis	300.0		1			31002	07/31/22 00:07	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: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

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: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

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: JRU 108H

Job ID: 890-2658-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2658-1	SS07	Solid	07/26/22 09:35	07/26/22 16:02	0.5

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	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:	JRU 108H	**Turn Around**	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	5 day TAT
Sampler's Name:	Liz Cheli	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	IR-007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.4	
Total Containers:		Corrected Temperature:	4.2	

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021	Sample Comments
SS07	S	7/26/2022	935	0.5	Comp	1		x	x	x	Incident ID: nAPP2217931599
											Cost Center: 1139071001

890-2658 Chain of Custody

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		7.26.22 1603	4		
3			6		
5					

Revised Date 08/25/2020 Rev 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2658-1
SDG Number: Eddy County NM

Login Number: 2658
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: 890-2658-1
SDG Number: Eddy County NM

Login Number: 2658
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/28/22 10:13 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").	True	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-2917-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
9/22/2022 9:09:12 AM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-2917-1
SDG: 03E1558090

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Eurofins Carlsbad
9/22/2022

Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

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

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: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Job ID: 890-2917-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2917-1

Receipt
The samples were received on 9/9/2022 9:22 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: BH01 (890-2917-1), BH01A (890-2917-2) and BH02 (890-2917-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-34181/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-34181 and analytical batch 880-34171 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-34181 and analytical batch 880-34171 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-34288 and analytical batch 880-34499 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Client Sample ID: BH01

Lab Sample ID: 890-2917-1
Matrix: Solid
Date Collected: 09/08/22 10:45
Date Received: 09/09/22 09:22
Sample Depth: 2

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/22/22 01:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/22/22 01:28	1
Ethylbenzene	**0.0140**		0.00200		mg/Kg		09/19/22 14:33	09/22/22 01:28	1
m-Xylene & p-Xylene	**0.0377**		0.00399		mg/Kg		09/19/22 14:33	09/22/22 01:28	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/22/22 01:28	1
Xylenes, Total	**0.0377**		0.00399		mg/Kg		09/19/22 14:33	09/22/22 01:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*228*	*S1+*	*70 - 130*	*09/19/22 14:33*	*09/22/22 01:28*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*09/19/22 14:33*	*09/22/22 01:28*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0517**		0.00399		mg/Kg			09/22/22 09:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**6870**		250		mg/Kg			09/13/22 10:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**267**	***1**	250		mg/Kg		09/12/22 08:48	09/12/22 18:54	5
Diesel Range Organics (Over C10-C28)	**5760**		250		mg/Kg		09/12/22 08:48	09/12/22 18:54	5
Oil Range Organics (Over C28-C36)	**841**		250		mg/Kg		09/12/22 08:48	09/12/22 18:54	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*09/12/22 08:48*	*09/12/22 18:54*	*5*
o-Terphenyl	*107*		*70 - 130*	*09/12/22 08:48*	*09/12/22 18:54*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2130**		25.2		mg/Kg			09/15/22 11:18	5

Client Sample ID: BH01A

Lab Sample ID: 890-2917-2
Matrix: Solid
Date Collected: 09/08/22 10:55
Date Received: 09/09/22 09:22
Sample Depth: 4

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/19/22 14:33	09/22/22 01:48	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/19/22 14:33	09/22/22 01:48	1
Ethylbenzene	**0.00502**		0.00198		mg/Kg		09/19/22 14:33	09/22/22 01:48	1
m-Xylene & p-Xylene	**0.0113**		0.00397		mg/Kg		09/19/22 14:33	09/22/22 01:48	1
o-Xylene	**0.0114**		0.00198		mg/Kg		09/19/22 14:33	09/22/22 01:48	1
Xylenes, Total	**0.0227**		0.00397		mg/Kg		09/19/22 14:33	09/22/22 01:48	1

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Client Sample ID: BH01A

Lab Sample ID: 890-2917-2

Date Collected: 09/08/22 10:55
Matrix: Solid
Date Received: 09/09/22 09:22
Sample Depth: 4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	154	S1+	70 - 130	09/19/22 14:33	09/22/22 01:48	1
1,4-Difluorobenzene (Surr)	88		70 - 130	09/19/22 14:33	09/22/22 01:48	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0277		0.00397		mg/Kg			09/22/22 09:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	2550		49.9		mg/Kg			09/13/22 10:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	75.9	*1	49.9		mg/Kg		09/12/22 08:48	09/12/22 19:37	1
Diesel Range Organics (Over C10-C28)	2140		49.9		mg/Kg		09/12/22 08:48	09/12/22 19:37	1
Oil Range Organics (Over C28-C36)	331		49.9		mg/Kg		09/12/22 08:48	09/12/22 19:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130	09/12/22 08:48	09/12/22 19:37	1
o-Terphenyl	89		70 - 130	09/12/22 08:48	09/12/22 19:37	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3980		25.0		mg/Kg			09/15/22 11:23	5

Client Sample ID: BH02

Lab Sample ID: 890-2917-3

Date Collected: 09/08/22 12:20
Matrix: Solid
Date Received: 09/09/22 09:22
Sample Depth: 2

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/19/22 14:33	09/22/22 02:09	1
Toluene	0.00433		0.00201		mg/Kg		09/19/22 14:33	09/22/22 02:09	1
Ethylbenzene	0.0947		0.00201		mg/Kg		09/19/22 14:33	09/22/22 02:09	1
m-Xylene & p-Xylene	0.353		0.00402		mg/Kg		09/19/22 14:33	09/22/22 02:09	1
o-Xylene	0.379		0.00201		mg/Kg		09/19/22 14:33	09/22/22 02:09	1
Xylenes, Total	0.732		0.00402		mg/Kg		09/19/22 14:33	09/22/22 02:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	162	S1+	70 - 130	09/19/22 14:33	09/22/22 02:09	1
1,4-Difluorobenzene (Surr)	97		70 - 130	09/19/22 14:33	09/22/22 02:09	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.831		0.00402		mg/Kg			09/22/22 09:55	1

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Client Sample ID: BH02

Lab Sample ID: 890-2917-3
Matrix: Solid
Date Collected: 09/08/22 12:20
Date Received: 09/09/22 09:22
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	3990		49.8		mg/Kg			09/13/22 10:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	406	*1	49.8		mg/Kg		09/12/22 08:48	09/12/22 19:15	1
Diesel Range Organics (Over C10-C28)	3090		49.8		mg/Kg		09/12/22 08:48	09/12/22 19:15	1
Oil Range Organics (Over C28-C36)	497		49.8		mg/Kg		09/12/22 08:48	09/12/22 19:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*09/12/22 08:48*	*09/12/22 19:15*	*1*
o-Terphenyl	*84*		*70 - 130*	*09/12/22 08:48*	*09/12/22 19:15*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7530		49.9		mg/Kg			09/15/22 11:27	10

Client Sample ID: BH03

Lab Sample ID: 890-2917-4
Matrix: Solid
Date Collected: 09/08/22 13:00
Date Received: 09/09/22 09:22
Sample Depth: 1

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/19/22 14:33	09/22/22 02:29	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/19/22 14:33	09/22/22 02:29	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/19/22 14:33	09/22/22 02:29	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/19/22 14:33	09/22/22 02:29	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/19/22 14:33	09/22/22 02:29	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/19/22 14:33	09/22/22 02:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*09/19/22 14:33*	*09/22/22 02:29*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*09/19/22 14:33*	*09/22/22 02:29*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/22/22 09:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	75.6		49.9		mg/Kg			09/13/22 10:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		09/12/22 08:48	09/12/22 19:58	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/22 08:48	09/12/22 19:58	1

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Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Client Sample ID: BH03
Date Collected: 09/08/22 13:00
Date Received: 09/09/22 09:22
Sample Depth: 1

Lab Sample ID: 890-2917-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil Range Organics (Over C28-C36)	75.6		49.9		mg/Kg		09/12/22 08:48	09/12/22 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*09/12/22 08:48*	*09/12/22 19:58*	*1*
o-Terphenyl	*95*		*70 - 130*	*09/12/22 08:48*	*09/12/22 19:58*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	54.1		5.00		mg/Kg			09/14/22 23:30	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

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)
890-2915-A-1-C MS	Matrix Spike	115	109
890-2915-A-1-D MSD	Matrix Spike Duplicate	117	102
890-2917-1	BH01	228 S1+	99
890-2917-2	BH01A	154 S1+	88
890-2917-3	BH02	162 S1+	97
890-2917-4	BH03	118	88
LCS 880-34851/1-A	Lab Control Sample	114	106
LCSD 880-34851/2-A	Lab Control Sample Dup	115	108
MB 880-34851/5-A	Method Blank	88	77
MB 880-34941/5-A	Method Blank	100	93

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)
890-2907-A-1-C MS	Matrix Spike	98	93
890-2907-A-1-D MSD	Matrix Spike Duplicate	99	93
890-2917-1	BH01	93	107
890-2917-2	BH01A	93	89
890-2917-3	BH02	100	84
890-2917-4	BH03	95	95
LCS 880-34181/2-A	Lab Control Sample	144 S1+	151 S1+
LCSD 880-34181/3-A	Lab Control Sample Dup	122	130
MB 880-34181/1-A	Method Blank	105	109

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-34851/5-A
Matrix: Solid
Analysis Batch: 35013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/21/22 20:40	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/21/22 20:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/21/22 20:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/19/22 14:33	09/21/22 20:40	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/19/22 14:33	09/21/22 20:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/19/22 14:33	09/21/22 20:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*09/19/22 14:33*	*09/21/22 20:40*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*09/19/22 14:33*	*09/21/22 20:40*	*1*

Lab Sample ID: LCS 880-34851/1-A
Matrix: Solid
Analysis Batch: 35013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34851

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09662		mg/Kg		97	70 - 130		
Toluene			0.100	0.08888		mg/Kg		89	70 - 130		
Ethylbenzene			0.100	0.09395		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1964		mg/Kg		98	70 - 130		
o-Xylene			0.100	0.1106		mg/Kg		111	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: LCSD 880-34851/2-A
Matrix: Solid
Analysis Batch: 35013

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 34851

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09096		mg/Kg		91	70 - 130	6	35
Toluene			0.100	0.08531		mg/Kg		85	70 - 130	4	35
Ethylbenzene			0.100	0.08835		mg/Kg		88	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1845		mg/Kg		92	70 - 130	6	35
o-Xylene			0.100	0.1080		mg/Kg		108	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: 890-2915-A-1-C MS
Matrix: Solid
Analysis Batch: 35013

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 34851

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U	0.101	0.09155		mg/Kg		91	70 - 130		
Toluene	<0.00202	U	0.101	0.08263		mg/Kg		82	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

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

Lab Sample ID: 890-2915-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 35013 — **Prep Batch: 34851**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U	0.101	0.08658		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.202	0.1775		mg/Kg		88	70 - 130
o-Xylene	<0.00202	U	0.101	0.1042		mg/Kg		103	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*

Lab Sample ID: 890-2915-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 35013 — **Prep Batch: 34851**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0996	0.08776		mg/Kg		88	70 - 130	4	35
Toluene	<0.00202	U	0.0996	0.08175		mg/Kg		82	70 - 130	1	35
Ethylbenzene	<0.00202	U	0.0996	0.08872		mg/Kg		89	70 - 130	2	35
m-Xylene & p-Xylene	<0.00403	U	0.199	0.1777		mg/Kg		89	70 - 130	0	35
o-Xylene	<0.00202	U	0.0996	0.1037		mg/Kg		104	70 - 130	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: MB 880-34941/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 35013 — **Prep Batch: 34941**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/20/22 12:51	09/21/22 10:04	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/20/22 12:51	09/21/22 10:04	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/20/22 12:51	09/21/22 10:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/20/22 12:51	09/21/22 10:04	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/20/22 12:51	09/21/22 10:04	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/20/22 12:51	09/21/22 10:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*09/20/22 12:51*	*09/21/22 10:04*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/20/22 12:51*	*09/21/22 10:04*	*1*

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

Lab Sample ID: MB 880-34181/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 34171 — **Prep Batch: 34181**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/22 08:48	09/12/22 10:56	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-34181/1-A
Matrix: Solid
Analysis Batch: 34171

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 34181

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/22 08:48	09/12/22 10:56	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/22 08:48	09/12/22 10:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*09/12/22 08:48*	*09/12/22 10:56*	*1*
o-Terphenyl	*109*		*70 - 130*	*09/12/22 08:48*	*09/12/22 10:56*	*1*

Lab Sample ID: LCS 880-34181/2-A
Matrix: Solid
Analysis Batch: 34171

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 34181

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	984.6		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1000		mg/Kg		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*144*	*S1+*	*70 - 130*
o-Terphenyl	*151*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-34181/3-A
Matrix: Solid
Analysis Batch: 34171

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 34181

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	765.3	*1	mg/Kg		77	70 - 130	25	20
Diesel Range Organics (Over C10-C28)	1000	859.3		mg/Kg		86	70 - 130	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*122*		*70 - 130*
o-Terphenyl	*130*		*70 - 130*

Lab Sample ID: 890-2907-A-1-C MS
Matrix: Solid
Analysis Batch: 34171

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 34181

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.8	U F1 *1	998	611.1	F1	mg/Kg		59	70 - 130
Diesel Range Organics (Over C10-C28)	<49.8	U	998	859.4		mg/Kg		83	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*98*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

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

Lab Sample ID: 890-2907-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 34171 — **Prep Batch: 34181**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U F1 *1	995	585.4	F1	mg/Kg		57	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<49.8	U	995	865.7		mg/Kg		84	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-34288/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 34499

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			09/14/22 22:32	1

Lab Sample ID: LCS 880-34288/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 34499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	241.4		mg/Kg		97	90 - 110

Lab Sample ID: LCSD 880-34288/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 34499

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	242.0		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 880-19037-A-2-D MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 34499

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	29800	F1	12600	54900	F1	mg/Kg		200	90 - 110

Lab Sample ID: 880-19037-A-2-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 34499

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	29800	F1	12600	53580	F1	mg/Kg		190	90 - 110	2	20

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2913-A-1-C MS
Matrix: Solid
Analysis Batch: 34499

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	22.1		250	276.5		mg/Kg		102	90 - 110

Lab Sample ID: 890-2913-A-1-D MSD
Matrix: Solid
Analysis Batch: 34499

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	22.1		250	277.5		mg/Kg		102	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

GC VOA

Prep Batch: 34851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Total/NA	Solid	5035	
890-2917-2	BH01A	Total/NA	Solid	5035	
890-2917-3	BH02	Total/NA	Solid	5035	
890-2917-4	BH03	Total/NA	Solid	5035	
MB 880-34851/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-34851/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-34851/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2915-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-2915-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 34941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-34941/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 35013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Total/NA	Solid	8021B	34851
890-2917-2	BH01A	Total/NA	Solid	8021B	34851
890-2917-3	BH02	Total/NA	Solid	8021B	34851
890-2917-4	BH03	Total/NA	Solid	8021B	34851
MB 880-34851/5-A	Method Blank	Total/NA	Solid	8021B	34851
MB 880-34941/5-A	Method Blank	Total/NA	Solid	8021B	34941
LCS 880-34851/1-A	Lab Control Sample	Total/NA	Solid	8021B	34851
LCSD 880-34851/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	34851
890-2915-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	34851
890-2915-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	34851

Analysis Batch: 35144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Total/NA	Solid	Total BTEX	
890-2917-2	BH01A	Total/NA	Solid	Total BTEX	
890-2917-3	BH02	Total/NA	Solid	Total BTEX	
890-2917-4	BH03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 34171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Total/NA	Solid	8015B NM	34181
890-2917-2	BH01A	Total/NA	Solid	8015B NM	34181
890-2917-3	BH02	Total/NA	Solid	8015B NM	34181
890-2917-4	BH03	Total/NA	Solid	8015B NM	34181
MB 880-34181/1-A	Method Blank	Total/NA	Solid	8015B NM	34181
LCS 880-34181/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	34181
LCSD 880-34181/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	34181
890-2907-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	34181
890-2907-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	34181

Prep Batch: 34181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

GC Semi VOA (Continued)

Prep Batch: 34181 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-2	BH01A	Total/NA	Solid	8015NM Prep	
890-2917-3	BH02	Total/NA	Solid	8015NM Prep	
890-2917-4	BH03	Total/NA	Solid	8015NM Prep	
MB 880-34181/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-34181/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-34181/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2907-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2907-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 34383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Total/NA	Solid	8015 NM	
890-2917-2	BH01A	Total/NA	Solid	8015 NM	
890-2917-3	BH02	Total/NA	Solid	8015 NM	
890-2917-4	BH03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 34288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Soluble	Solid	DI Leach	
890-2917-2	BH01A	Soluble	Solid	DI Leach	
890-2917-3	BH02	Soluble	Solid	DI Leach	
890-2917-4	BH03	Soluble	Solid	DI Leach	
MB 880-34288/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-34288/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-34288/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-19037-A-2-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-19037-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2913-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2913-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 34499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2917-1	BH01	Soluble	Solid	300.0	34288
890-2917-2	BH01A	Soluble	Solid	300.0	34288
890-2917-3	BH02	Soluble	Solid	300.0	34288
890-2917-4	BH03	Soluble	Solid	300.0	34288
MB 880-34288/1-A	Method Blank	Soluble	Solid	300.0	34288
LCS 880-34288/2-A	Lab Control Sample	Soluble	Solid	300.0	34288
LCSD 880-34288/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	34288
880-19037-A-2-D MS	Matrix Spike	Soluble	Solid	300.0	34288
880-19037-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	34288
890-2913-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	34288
890-2913-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	34288

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Client Sample ID: BH01

Date Collected: 09/08/22 10:45
Date Received: 09/09/22 09:22

Lab Sample ID: 890-2917-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	34851	09/19/22 14:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	35013	09/22/22 01:28	MR	EET MID
Total/NA	Analysis	Total BTEX		1			35144	09/22/22 09:55	AJ	EET MID
Total/NA	Analysis	8015 NM		1			34383	09/13/22 10:25	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	34181	09/12/22 08:48	AM	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	34171	09/12/22 18:54	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	34288	09/12/22 11:50	KS	EET MID
Soluble	Analysis	300.0		5			34499	09/15/22 11:18	CH	EET MID

Client Sample ID: BH01A

Date Collected: 09/08/22 10:55
Date Received: 09/09/22 09:22

Lab Sample ID: 890-2917-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	34851	09/19/22 14:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	35013	09/22/22 01:48	MR	EET MID
Total/NA	Analysis	Total BTEX		1			35144	09/22/22 09:55	AJ	EET MID
Total/NA	Analysis	8015 NM		1			34383	09/13/22 10:25	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	34181	09/12/22 08:48	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	34171	09/12/22 19:37	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	34288	09/12/22 11:50	KS	EET MID
Soluble	Analysis	300.0		5			34499	09/15/22 11:23	CH	EET MID

Client Sample ID: BH02

Date Collected: 09/08/22 12:20
Date Received: 09/09/22 09:22

Lab Sample ID: 890-2917-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	34851	09/19/22 14:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	35013	09/22/22 02:09	MR	EET MID
Total/NA	Analysis	Total BTEX		1			35144	09/22/22 09:55	AJ	EET MID
Total/NA	Analysis	8015 NM		1			34383	09/13/22 10:25	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	34181	09/12/22 08:48	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	34171	09/12/22 19:15	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	34288	09/12/22 11:50	KS	EET MID
Soluble	Analysis	300.0		10			34499	09/15/22 11:27	CH	EET MID

Client Sample ID: BH03

Date Collected: 09/08/22 13:00
Date Received: 09/09/22 09:22

Lab Sample ID: 890-2917-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	34851	09/19/22 14:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	35013	09/22/22 02:29	MR	EET MID
Total/NA	Analysis	Total BTEX		1			35144	09/22/22 09:55	AJ	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Client Sample ID: BH03

Date Collected: 09/08/22 13:00
Date Received: 09/09/22 09:22

Lab Sample ID: 890-2917-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			34383	09/13/22 10:25	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	34181	09/12/22 08:48	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	34171	09/12/22 19:58	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	34288	09/12/22 11:50	KS	EET MID
Soluble	Analysis	300.0		1			34499	09/14/22 23:30	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-2917-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2917-1	BH01	Solid	09/08/22 10:45	09/09/22 09:22	2
890-2917-2	BH01A	Solid	09/08/22 10:55	09/09/22 09:22	4
890-2917-3	BH02	Solid	09/08/22 12:20	09/09/22 09:22	2
890-2917-4	BH03	Solid	09/08/22 13:00	09/09/22 09:22	1

Chain of Custody

eurofins | 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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garret.Green@ExxonMobil.com

Work Order Comments

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

Project Name:	JRU 108H	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558090	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	NM027
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.4
Total Containers:		Corrected Temperature:	1.2

Preservative Codes

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

890-2917 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
BH01	S	9/8/2022	10:45	2	G	1	x	x	x
BH01A	S	9/8/2022	10:55	4	G	1	x	x	x
BH02	S	9/8/2022	12:20	2	G	1	x	x	x
BH03	S	9/8/2022	13:00	1	G	1	x	x	x

Sample Comments

Incident ID:
nAPP2217931599
Cost Center:
1139071001
AFE:

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		9.9.22 920	4		
3			6		
5					

Revised Date 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2917-1
SDG Number: 03E1558090

Login Number: 2917
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: 890-2917-1
SDG Number: 03E1558090

Login Number: 2917
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 09/12/22 09:08 AM

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

eurofins | Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3258-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H
Revision: 1

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

Attn: Ben Belill

JKramer

Authorized for release by:
11/2/2022 4:35:09 PM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-3258-1
SDG: 03E1558090

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

Job ID: 890-3258-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3258-1

REVISION

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re run.

Report revision history

Receipt
The sample was received on 10/21/2022 10:55 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: BG01 (890-3258-1).

GC VOA
Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control 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 matrix spike duplicate (MSD) recoveries for preparation batch 880-38417 and analytical batch 880-38323 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.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37579 and analytical batch 880-37788 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

Client Sample ID: BG01
Date Collected: 10/20/22 14:30
Date Received: 10/21/22 10:55
Sample Depth: 0.5'

Lab Sample ID: 890-3258-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 07:28	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 07:28	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 07:28	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/26/22 14:13	10/29/22 07:28	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 07:28	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/26/22 14:13	10/29/22 07:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*	*10/26/22 14:13*	*10/29/22 07:28*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/26/22 14:13*	*10/29/22 07:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		11/01/22 15:08	11/02/22 05:03	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/01/22 15:08	11/02/22 05:03	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/01/22 15:08	11/02/22 05:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*70*		*70 - 130*	*11/01/22 15:08*	*11/02/22 05:03*	*1*
o-Terphenyl	*74*		*70 - 130*	*11/01/22 15:08*	*11/02/22 05:03*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10.4**		4.96		mg/Kg			10/25/22 20:41	1

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

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)
880-20605-A-1-E MS	Matrix Spike	101	92
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90
890-3258-1	BG01	127	92
LCS 880-37911/1-A	Lab Control Sample	99	91
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91
MB 880-37911/5-A	Method Blank	102	87
MB 880-38021/5-A	Method Blank	72	60 S1-

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)
890-3258-1	BG01	70	74
890-3335-A-1-C MS	Matrix Spike	88	86
890-3335-A-1-D MSD	Matrix Spike Duplicate	79	76
LCS 880-38417/2-A	Lab Control Sample	101	106
LCSD 880-38417/3-A	Lab Control Sample Dup	90	95
MB 880-38417/1-A	Method Blank	92	99

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*

Lab Sample ID: LCS 880-37911/1-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07484		mg/Kg		75	70 - 130		
Toluene			0.100	0.07671		mg/Kg		77	70 - 130		
Ethylbenzene			0.100	0.07425		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1480		mg/Kg		74	70 - 130		
o-Xylene			0.100	0.08609		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: LCSD 880-37911/2-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene			0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene			0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene			0.100	0.08950		mg/Kg		89	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 880-20605-A-1-E MS
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130		
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

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

Lab Sample ID: 880-20605-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-20605-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.06610	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00201	U F1	0.0990	0.06481	F1	mg/Kg		65	70 - 130	20	35
Ethylbenzene	<0.00201	U F1	0.0990	0.06337	F1	mg/Kg		64	70 - 130	19	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.1224	F1	mg/Kg		62	70 - 130	16	35
o-Xylene	<0.00201	U	0.0990	0.07052		mg/Kg		71	70 - 130	17	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: MB 880-38021/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 38021**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*
1,4-Difluorobenzene (Surr)	*60*	*S1-*	*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*

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

Lab Sample ID: MB 880-38417/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38323 — **Prep Batch: 38417**

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		11/01/22 15:08	11/01/22 21:10	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-38417/1-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38417

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/01/22 21:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/01/22 21:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/01/22 15:08*	*11/01/22 21:10*	*1*
o-Terphenyl	*99*		*70 - 130*	*11/01/22 15:08*	*11/01/22 21:10*	*1*

Lab Sample ID: LCS 880-38417/2-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38417

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1076		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1008		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*106*		*70 - 130*

Lab Sample ID: LCSD 880-38417/3-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38417

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1087		mg/Kg		109	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	910.4		mg/Kg		91	70 - 130	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Lab Sample ID: 890-3335-A-1-C MS
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	812.4		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)	77.7	F1	997	799.4		mg/Kg		72	70 - 130		

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

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

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

Lab Sample ID: 890-3335-A-1-D MSD
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38417

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	984.3		mg/Kg		96	70 - 130	19	20
Diesel Range Organics (Over C10-C28)	77.7	F1	999	702.0	F1	mg/Kg		62	70 - 130	13	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*79*		*70 - 130*
o-Terphenyl	*76*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37579/1-A
Matrix: Solid
Analysis Batch: 37788

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/25/22 19:00	1

Lab Sample ID: LCS 880-37579/2-A
Matrix: Solid
Analysis Batch: 37788

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.4		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-37579/3-A
Matrix: Solid
Analysis Batch: 37788

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	243.5		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 890-3252-A-43-B MS
Matrix: Solid
Analysis Batch: 37788

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	853	F1	250	1060	F1	mg/Kg		83	90 - 110		

Lab Sample ID: 890-3252-A-43-C MSD
Matrix: Solid
Analysis Batch: 37788

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	853	F1	250	1030	F1	mg/Kg		71	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Total/NA	Solid	8015 NM	

Analysis Batch: 38323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Total/NA	Solid	8015B NM	38417
MB 880-38417/1-A	Method Blank	Total/NA	Solid	8015B NM	38417
LCS 880-38417/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38417
LCSD 880-38417/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38417
890-3335-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38417
890-3335-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38417

Prep Batch: 38417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Total/NA	Solid	8015NM Prep	
MB 880-38417/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38417/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38417/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3335-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3335-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

HPLC/IC

Leach Batch: 37579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Soluble	Solid	DI Leach	
MB 880-37579/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3252-A-43-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3252-A-43-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3258-1	BG01	Soluble	Solid	300.0	37579
MB 880-37579/1-A	Method Blank	Soluble	Solid	300.0	37579
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	300.0	37579
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37579
890-3252-A-43-B MS	Matrix Spike	Soluble	Solid	300.0	37579
890-3252-A-43-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37579

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

Client Sample ID: BG01

Date Collected: 10/20/22 14:30
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3258-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 07:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38194	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37810	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	38417	11/01/22 15:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38323	11/02/22 05:03	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		1			37788	10/25/22 20:41	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3258-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3258-1	BG01	Solid	10/20/22 14:30	10/21/22 10:55	0.5'

Chain of Custody

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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

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:	JRU 108H	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558090	Due Date:	
Project Location:	EDDY COUNTY, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Ben Belill		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.4	
Total Containers:		Corrected Temperature:	1.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
BG01	S	10/20/2022	1430	0.5'	Grab/	1		X	X	X

Parameters

890-3258 Chain of Custody

Preservative Codes

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

Sample Comments

Cost Center: 1139071001

Incident Number: ~~NAPP2217931599~~

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

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Amanda Blaz	10/21/22 1035			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3258-1
SDG Number: 03E1558090

Login Number: 3258
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3258-1
SDG Number: 03E1558090

Login Number: 3258
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/24/22 07:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3259-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H
Revision: 1

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

Attn: Ben Belill

JKramer

Authorized for release by:
11/2/2022 4:37:12 PM

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-3259-1
SDG: 03E1558090

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

Job ID: 890-3259-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3259-1

REVISION

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re run.

Report revision history

Receipt
The sample was received on 10/21/2022 10:55 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: BG01 (890-3259-1).

GC VOA
Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control 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 matrix spike duplicate (MSD) recoveries for preparation batch 880-38417 and analytical batch 880-38323 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.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37579 and analytical batch 880-37788 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

Client Sample ID: BG01
Date Collected: 10/20/22 14:35
Date Received: 10/21/22 10:55
Sample Depth: 4'

Lab Sample ID: 890-3259-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 03:38	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 03:38	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 03:38	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 03:38	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 03:38	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 03:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*	*10/26/22 14:13*	*10/29/22 03:38*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*10/26/22 14:13*	*10/29/22 03:38*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/02/22 05:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/02/22 05:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/02/22 05:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*11/01/22 15:08*	*11/02/22 05:25*	*1*
o-Terphenyl	*90*		*70 - 130*	*11/01/22 15:08*	*11/02/22 05:25*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4860**		50.0		mg/Kg			10/25/22 20:49	10

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

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)
880-20605-A-1-E MS	Matrix Spike	101	92
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90
890-3259-1	BG01	122	100
LCS 880-37911/1-A	Lab Control Sample	99	91
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91
MB 880-37911/5-A	Method Blank	102	87
MB 880-38021/5-A	Method Blank	72	60 S1-

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)
890-3259-1	BG01	86	90
890-3335-A-1-C MS	Matrix Spike	88	86
890-3335-A-1-D MSD	Matrix Spike Duplicate	79	76
LCS 880-38417/2-A	Lab Control Sample	101	106
LCSD 880-38417/3-A	Lab Control Sample Dup	90	95
MB 880-38417/1-A	Method Blank	92	99

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*

Lab Sample ID: LCS 880-37911/1-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07484		mg/Kg		75	70 - 130		
Toluene			0.100	0.07671		mg/Kg		77	70 - 130		
Ethylbenzene			0.100	0.07425		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1480		mg/Kg		74	70 - 130		
o-Xylene			0.100	0.08609		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: LCSD 880-37911/2-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene			0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene			0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene			0.100	0.08950		mg/Kg		89	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 880-20605-A-1-E MS
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130		
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

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

Lab Sample ID: 880-20605-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-20605-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.06610	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00201	U F1	0.0990	0.06481	F1	mg/Kg		65	70 - 130	20	35
Ethylbenzene	<0.00201	U F1	0.0990	0.06337	F1	mg/Kg		64	70 - 130	19	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.1224	F1	mg/Kg		62	70 - 130	16	35
o-Xylene	<0.00201	U	0.0990	0.07052		mg/Kg		71	70 - 130	17	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: MB 880-38021/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 38021**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*
1,4-Difluorobenzene (Surr)	*60*	*S1-*	*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*

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

Lab Sample ID: MB 880-38417/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38323 — **Prep Batch: 38417**

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		11/01/22 15:08	11/01/22 21:10	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-38417/1-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38417

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/01/22 21:10	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/01/22 21:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/01/22 15:08*	*11/01/22 21:10*	*1*
o-Terphenyl	*99*		*70 - 130*	*11/01/22 15:08*	*11/01/22 21:10*	*1*

Lab Sample ID: LCS 880-38417/2-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38417

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1076		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1008		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*106*		*70 - 130*

Lab Sample ID: LCSD 880-38417/3-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38417

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1087		mg/Kg		109	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	910.4		mg/Kg		91	70 - 130	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Lab Sample ID: 890-3335-A-1-C MS
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	812.4		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)	77.7	F1	997	799.4		mg/Kg		72	70 - 130		

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

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

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

Lab Sample ID: 890-3335-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38323 — **Prep Batch: 38417**

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	984.3		mg/Kg		96	70 - 130	19	20
Diesel Range Organics (Over C10-C28)	77.7	F1	999	702.0	F1	mg/Kg		62	70 - 130	13	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*79*		*70 - 130*
o-Terphenyl	*76*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37579/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/25/22 19:00	1

Lab Sample ID: LCS 880-37579/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.4		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-37579/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.5		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 890-3252-A-43-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	853	F1	250	1060	F1	mg/Kg		83	90 - 110		

Lab Sample ID: 890-3252-A-43-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	853	F1	250	1030	F1	mg/Kg		71	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Total/NA	Solid	8015 NM	

Analysis Batch: 38323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Total/NA	Solid	8015B NM	38417
MB 880-38417/1-A	Method Blank	Total/NA	Solid	8015B NM	38417
LCS 880-38417/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38417
LCSD 880-38417/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38417
890-3335-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38417
890-3335-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38417

Prep Batch: 38417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Total/NA	Solid	8015NM Prep	
MB 880-38417/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38417/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38417/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3335-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3335-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

HPLC/IC

Leach Batch: 37579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Soluble	Solid	DI Leach	
MB 880-37579/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3252-A-43-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3252-A-43-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3259-1	BG01	Soluble	Solid	300.0	37579
MB 880-37579/1-A	Method Blank	Soluble	Solid	300.0	37579
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	300.0	37579
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37579
890-3252-A-43-B MS	Matrix Spike	Soluble	Solid	300.0	37579
890-3252-A-43-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37579

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

Client Sample ID: BG01

Date Collected: 10/20/22 14:35
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3259-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 03:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38190	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37811	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38417	11/01/22 15:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38323	11/02/22 05:25	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		10			37788	10/25/22 20:49	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3259-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3259-1	BG01	Solid	10/20/22 14:35	10/21/22 10:55	4'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page ___1__ of ___1___

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, 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:	JRU 108H	Turn Around	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	EDDY COUNTY, NM	Due Date:	
Sampler's Name:	Ben Belill	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TDM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.4	
Total Containers:		Corrected Temperature:	1.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
BG01	S	10/20/2022	1435	4'	Grab/	1		X	X	X

Parameters

890-3259 Chain of Custody

Preservative Codes

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

Sample Comments

Cost Center: 1139071001

Incident Number: NAPP2217931599

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			10/21/22 0			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3259-1
SDG Number: 03E1558090

Login Number: 3259
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3259-1
SDG Number: 03E1558090

Login Number: 3259
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/24/22 07:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3260-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/31/2022 9:39:13 AM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-3260-1
SDG: 03E1558090

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Job ID: 890-3260-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3260-1

Receipt
The sample was received on 10/21/2022 10:55 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: BG01 (890-3260-1).

GC VOA
Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37617 and analytical batch 880-37611 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37579 and analytical batch 880-37788 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Client Sample ID: BG01

Date Collected: 10/20/22 14:40
Date Received: 10/21/22 10:55
Sample Depth: 6'

Lab Sample ID: 890-3260-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00216**		0.00200		mg/Kg		10/26/22 14:13	10/29/22 03:59	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 03:59	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 03:59	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/26/22 14:13	10/29/22 03:59	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 03:59	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/26/22 14:13	10/29/22 03:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*10/26/22 14:13*	*10/29/22 03:59*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/26/22 14:13*	*10/29/22 03:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 19:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 19:15	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 19:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*10/24/22 08:52*	*10/24/22 19:15*	*1*
o-Terphenyl	*89*		*70 - 130*	*10/24/22 08:52*	*10/24/22 19:15*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4650**		50.5		mg/Kg			10/25/22 20:57	10

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-20605-A-1-E MS	Matrix Spike	101	92										
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90										
890-3260-1	BG01	108	92										
LCS 880-37911/1-A	Lab Control Sample	99	91										
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91										
MB 880-37911/5-A	Method Blank	102	87										
MB 880-38021/5-A	Method Blank	72	60 S1-										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-3253-A-1-H MS	Matrix Spike	95	92										
890-3253-A-1-I MSD	Matrix Spike Duplicate	88	84										
890-3260-1	BG01	84	89										
LCS 880-37617/2-A	Lab Control Sample	105	110										
LCSD 880-37617/3-A	Lab Control Sample Dup	108	114										
MB 880-37617/1-A	Method Blank	80	94										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*

Lab Sample ID: LCS 880-37911/1-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07484		mg/Kg		75	70 - 130		
Toluene			0.100	0.07671		mg/Kg		77	70 - 130		
Ethylbenzene			0.100	0.07425		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1480		mg/Kg		74	70 - 130		
o-Xylene			0.100	0.08609		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: LCSD 880-37911/2-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene			0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene			0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene			0.100	0.08950		mg/Kg		89	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 880-20605-A-1-E MS
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130		
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

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

Lab Sample ID: 880-20605-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-20605-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.06610	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00201	U F1	0.0990	0.06481	F1	mg/Kg		65	70 - 130	20	35
Ethylbenzene	<0.00201	U F1	0.0990	0.06337	F1	mg/Kg		64	70 - 130	19	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.1224	F1	mg/Kg		62	70 - 130	16	35
o-Xylene	<0.00201	U	0.0990	0.07052		mg/Kg		71	70 - 130	17	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: MB 880-38021/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 38021**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*
1,4-Difluorobenzene (Surr)	*60*	*S1-*	*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*

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

Lab Sample ID: MB 880-37617/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/24/22 08:52	10/24/22 10:35	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-37617/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 10:35	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*10/24/22 08:52*	*10/24/22 10:35*	*1*
o-Terphenyl	*94*		*70 - 130*	*10/24/22 08:52*	*10/24/22 10:35*	*1*

Lab Sample ID: LCS 880-37617/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1169		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1015		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: LCSD 880-37617/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1158		mg/Kg		116	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1018		mg/Kg		102	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*108*		*70 - 130*
o-Terphenyl	*114*		*70 - 130*

Lab Sample ID: 890-3253-A-1-H MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U F1 F2	998	1543	F1	mg/Kg		151	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U	998	812.7		mg/Kg		81	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*92*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

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

Lab Sample ID: 890-3253-A-1-I MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U F1 F2	998	1075	F2	mg/Kg		104	70 - 130	36	20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	782.1		mg/Kg		78	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*88*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37579/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/25/22 19:00	1

Lab Sample ID: LCS 880-37579/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.4		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-37579/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.5		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 890-3252-A-43-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	853	F1	250	1060	F1	mg/Kg		83	90 - 110		

Lab Sample ID: 890-3252-A-43-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	853	F1	250	1030	F1	mg/Kg		71	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Total/NA	Solid	8015B NM	37617
MB 880-37617/1-A	Method Blank	Total/NA	Solid	8015B NM	37617
LCS 880-37617/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37617
LCSD 880-37617/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37617
890-3253-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	37617
890-3253-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37617

Prep Batch: 37617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Total/NA	Solid	8015NM Prep	
MB 880-37617/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37617/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37617/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3253-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3253-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

HPLC/IC

Leach Batch: 37579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Soluble	Solid	DI Leach	
MB 880-37579/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3252-A-43-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3252-A-43-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3260-1	BG01	Soluble	Solid	300.0	37579
MB 880-37579/1-A	Method Blank	Soluble	Solid	300.0	37579
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	300.0	37579
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37579
890-3252-A-43-B MS	Matrix Spike	Soluble	Solid	300.0	37579
890-3252-A-43-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37579

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Client Sample ID: BG01

Date Collected: 10/20/22 14:40
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3260-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 03:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38191	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37812	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	37617	10/24/22 08:52	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37611	10/24/22 19:15	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		10			37788	10/25/22 20:57	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3260-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3260-1	BG01	Solid	10/20/22 14:40	10/21/22 10:55	6'

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, 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:	JRU 108H	Turn Around	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	EDDY COUNTY, NM	Due Date:	
Sampler's Name:	Ben Belill	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TAM-00
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.4
Total Containers:		Corrected Temperature:	1.2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	Parameters: TPH (8015)	Parameters: BTEX (8021)
BG01	S	10/20/2022	1440	6'	Grab/	1		X	X	X

890-3260 Chain of Custody

Preservative Codes

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

Sample Comments

Cost Center: 1139071001

Incident Number: ~~NAPP2217931599~~

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10/21/22 1025	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3260-1
SDG Number: 03E1558090

Login Number: 3260
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3260-1
SDG Number: 03E1558090

Login Number: 3260
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/24/22 07:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3261-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H
Revision: 1

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

Attn: Ben Belill

JKramer

Authorized for release by:
11/2/2022 4:39:15 PM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-3261-1
SDG: 03E1558090

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Job ID: 890-3261-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3261-1

REVISION

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re run.

Report revision history

Receipt
The samples were received on 10/21/2022 10:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3261-1), PH01 (890-3261-2), PH01 (890-3261-3), PH01 (890-3261-4) and PH01 (890-3261-5).

GC VOA
Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: PH01 (890-3261-1), PH01 (890-3261-2) and PH01 (890-3261-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37617 and analytical batch 880-37611 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-38417 and analytical batch 880-38323 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.

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: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Client Sample ID: PH01
Date Collected: 10/20/22 11:50
Date Received: 10/21/22 10:55
Sample Depth: 2'

Lab Sample ID: 890-3261-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0498	U	0.0498		mg/Kg		10/26/22 14:13	10/29/22 08:31	25
Toluene	<0.0498	U	0.0498		mg/Kg		10/26/22 14:13	10/29/22 08:31	25
Ethylbenzene	**0.120**		0.0498		mg/Kg		10/26/22 14:13	10/29/22 08:31	25
m-Xylene & p-Xylene	**1.90**		0.0996		mg/Kg		10/26/22 14:13	10/29/22 08:31	25
o-Xylene	**0.380**		0.0498		mg/Kg		10/26/22 14:13	10/29/22 08:31	25
Xylenes, Total	**2.28**		0.0996		mg/Kg		10/26/22 14:13	10/29/22 08:31	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*245*	*S1+*	*70 - 130*	*10/26/22 14:13*	*10/29/22 08:31*	*25*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/26/22 14:13*	*10/29/22 08:31*	*25*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**2.40**		0.0996		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**6370**		50.0		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**935**		50.0		mg/Kg		10/24/22 08:52	10/24/22 16:50	1
Diesel Range Organics (Over C10-C28)	**3250**		50.0		mg/Kg		10/24/22 08:52	10/24/22 16:50	1
Oil Range Organics (Over C28-C36)	**2180**		50.0		mg/Kg		10/24/22 08:52	10/24/22 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*10/24/22 08:52*	*10/24/22 16:50*	*1*
o-Terphenyl	*86*		*70 - 130*	*10/24/22 08:52*	*10/24/22 16:50*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2870**		25.0		mg/Kg			10/25/22 21:06	5

Client Sample ID: PH01
Date Collected: 10/20/22 11:55
Date Received: 10/21/22 10:55
Sample Depth: 3'

Lab Sample ID: 890-3261-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0497	U	0.0497		mg/Kg		10/26/22 14:13	10/29/22 08:51	25
Toluene	**2.13**		0.0497		mg/Kg		10/26/22 14:13	10/29/22 08:51	25
Ethylbenzene	**6.51**		0.0497		mg/Kg		10/26/22 14:13	10/29/22 08:51	25
m-Xylene & p-Xylene	**14.6**		0.0994		mg/Kg		10/26/22 14:13	10/29/22 08:51	25
o-Xylene	**9.38**		0.0497		mg/Kg		10/26/22 14:13	10/29/22 08:51	25
Xylenes, Total	**24.0**		0.0994		mg/Kg		10/26/22 14:13	10/29/22 08:51	25

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Client Sample ID: PH01
Date Collected: 10/20/22 11:55
Date Received: 10/21/22 10:55
Sample Depth: 3'

Lab Sample ID: 890-3261-2
Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	426	S1+	70 - 130	10/26/22 14:13	10/29/22 08:51	25
1,4-Difluorobenzene (Surr)	89		70 - 130	10/26/22 14:13	10/29/22 08:51	25

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**32.6**		0.0994		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**4010**		50.0		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**848**		50.0		mg/Kg		10/24/22 08:52	10/24/22 17:11	1
Diesel Range Organics (Over C10-C28)	**1970**		50.0		mg/Kg		10/24/22 08:52	10/24/22 17:11	1
Oil Range Organics (Over C28-C36)	**1190**		50.0		mg/Kg		10/24/22 08:52	10/24/22 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130	10/24/22 08:52	10/24/22 17:11	1
o-Terphenyl	77		70 - 130	10/24/22 08:52	10/24/22 17:11	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12300**		100		mg/Kg			10/25/22 21:14	20

Client Sample ID: PH01
Date Collected: 10/20/22 12:00
Date Received: 10/21/22 10:55
Sample Depth: 4'

Lab Sample ID: 890-3261-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0499	U	0.0499		mg/Kg		10/26/22 14:13	10/29/22 09:12	25
Toluene	**1.76**		0.0499		mg/Kg		10/26/22 14:13	10/29/22 09:12	25
Ethylbenzene	**3.84**		0.0499		mg/Kg		10/26/22 14:13	10/29/22 09:12	25
m-Xylene & p-Xylene	**13.0**		0.0998		mg/Kg		10/26/22 14:13	10/29/22 09:12	25
o-Xylene	**8.51**		0.0499		mg/Kg		10/26/22 14:13	10/29/22 09:12	25
Xylenes, Total	**21.5**		0.0998		mg/Kg		10/26/22 14:13	10/29/22 09:12	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	332	S1+	70 - 130	10/26/22 14:13	10/29/22 09:12	25
1,4-Difluorobenzene (Surr)	87		70 - 130	10/26/22 14:13	10/29/22 09:12	25

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**27.1**		0.0998		mg/Kg			10/30/22 21:36	1

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Client Sample ID: PH01

Date Collected: 10/20/22 12:00
Date Received: 10/21/22 10:55
Sample Depth: 4'

Lab Sample ID: 890-3261-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	2700		49.9		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	531		49.9		mg/Kg		10/24/22 08:52	10/24/22 17:31	1
Diesel Range Organics (Over C10-C28)	1340		49.9		mg/Kg		10/24/22 08:52	10/24/22 17:31	1
Oil Range Organics (Over C28-C36)	824		49.9		mg/Kg		10/24/22 08:52	10/24/22 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*10/24/22 08:52*	*10/24/22 17:31*	*1*
o-Terphenyl	*79*		*70 - 130*	*10/24/22 08:52*	*10/24/22 17:31*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3160		25.2		mg/Kg			10/25/22 21:23	5

Client Sample ID: PH01

Date Collected: 10/20/22 12:10
Date Received: 10/21/22 10:55
Sample Depth: 6'

Lab Sample ID: 890-3261-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 07:49	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 07:49	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 07:49	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 07:49	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 07:49	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 07:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*	*10/26/22 14:13*	*10/29/22 07:49*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*10/26/22 14:13*	*10/29/22 07:49*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/02/22 05:47	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/02/22 05:47	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/02/22 05:47	1

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Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Client Sample ID: PH01
Date Collected: 10/20/22 12:10
Date Received: 10/21/22 10:55
Sample Depth: 6'

Lab Sample ID: 890-3261-4
Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*85*		*70 - 130*	*11/01/22 15:08*	*11/02/22 05:47*	*1*
o-Terphenyl	*90*		*70 - 130*	*11/01/22 15:08*	*11/02/22 05:47*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26700**		250	mg/Kg			10/25/22 21:48	50

Client Sample ID: PH01
Date Collected: 10/20/22 12:20
Date Received: 10/21/22 10:55
Sample Depth: 7'

Lab Sample ID: 890-3261-5
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 08:10	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 08:10	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 08:10	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 08:10	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 08:10	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 08:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*10/26/22 14:13*	*10/29/22 08:10*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*10/26/22 14:13*	*10/29/22 08:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/25/22 11:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/01/22 15:08	11/02/22 06:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/01/22 15:08	11/02/22 06:08	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/01/22 15:08	11/02/22 06:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*11/01/22 15:08*	*11/02/22 06:08*	*1*
o-Terphenyl	*87*		*70 - 130*	*11/01/22 15:08*	*11/02/22 06:08*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4100**		50.3	mg/Kg			10/25/22 21:56	10

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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)
880-20605-A-1-E MS	Matrix Spike	101	92
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90
890-3261-1	PH01	245 S1+	105
890-3261-2	PH01	426 S1+	89
890-3261-3	PH01	332 S1+	87
890-3261-4	PH01	119	101
890-3261-5	PH01	129	98
LCS 880-37911/1-A	Lab Control Sample	99	91
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91
MB 880-37911/5-A	Method Blank	102	87
MB 880-38021/5-A	Method Blank	72	60 S1-

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)
890-3253-A-1-H MS	Matrix Spike	95	92
890-3253-A-1-I MSD	Matrix Spike Duplicate	88	84
890-3261-1	PH01	93	86
890-3261-2	PH01	94	77
890-3261-3	PH01	89	79
890-3261-4	PH01	85	90
890-3261-5	PH01	83	87
890-3335-A-1-C MS	Matrix Spike	88	86
890-3335-A-1-D MSD	Matrix Spike Duplicate	79	76
LCS 880-37617/2-A	Lab Control Sample	105	110
LCS 880-38417/2-A	Lab Control Sample	101	106
LCSD 880-37617/3-A	Lab Control Sample Dup	108	114
LCSD 880-38417/3-A	Lab Control Sample Dup	90	95
MB 880-37617/1-A	Method Blank	80	94
MB 880-38417/1-A	Method Blank	92	99

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*

Lab Sample ID: LCS 880-37911/1-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07484		mg/Kg		75	70 - 130		
Toluene			0.100	0.07671		mg/Kg		77	70 - 130		
Ethylbenzene			0.100	0.07425		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1480		mg/Kg		74	70 - 130		
o-Xylene			0.100	0.08609		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: LCSD 880-37911/2-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene			0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene			0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene			0.100	0.08950		mg/Kg		89	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 880-20605-A-1-E MS
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130		
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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

Lab Sample ID: 880-20605-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-20605-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.06610	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00201	U F1	0.0990	0.06481	F1	mg/Kg		65	70 - 130	20	35
Ethylbenzene	<0.00201	U F1	0.0990	0.06337	F1	mg/Kg		64	70 - 130	19	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.1224	F1	mg/Kg		62	70 - 130	16	35
o-Xylene	<0.00201	U	0.0990	0.07052		mg/Kg		71	70 - 130	17	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: MB 880-38021/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 38021**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*
1,4-Difluorobenzene (Surr)	*60*	*S1-*	*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*

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

Lab Sample ID: MB 880-37617/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/24/22 08:52	10/24/22 10:35	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-37617/1-A
Matrix: Solid
Analysis Batch: 37611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37617

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 10:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/24/22 08:52	10/24/22 10:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*10/24/22 08:52*	*10/24/22 10:35*	*1*
o-Terphenyl	*94*		*70 - 130*	*10/24/22 08:52*	*10/24/22 10:35*	*1*

Lab Sample ID: LCS 880-37617/2-A
Matrix: Solid
Analysis Batch: 37611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37617

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1169		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1015		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: LCSD 880-37617/3-A
Matrix: Solid
Analysis Batch: 37611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37617

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1158		mg/Kg		116	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1018		mg/Kg		102	70 - 130	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*108*		*70 - 130*
o-Terphenyl	*114*		*70 - 130*

Lab Sample ID: 890-3253-A-1-H MS
Matrix: Solid
Analysis Batch: 37611

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37617

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U F1 F2	998	1543	F1	mg/Kg		151	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U	998	812.7		mg/Kg		81	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*92*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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

Lab Sample ID: 890-3253-A-1-I MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37611 — **Prep Batch: 37617**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U F1 F2	998	1075	F2	mg/Kg		104	70 - 130	36	20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	782.1		mg/Kg		78	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*88*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

Lab Sample ID: MB 880-38417/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38323 — **Prep Batch: 38417**

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		11/01/22 15:08	11/01/22 21:10	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/01/22 21:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/01/22 15:08	11/01/22 21:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/01/22 15:08*	*11/01/22 21:10*	*1*
o-Terphenyl	*99*		*70 - 130*	*11/01/22 15:08*	*11/01/22 21:10*	*1*

Lab Sample ID: LCS 880-38417/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38323 — **Prep Batch: 38417**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1076		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1008		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*106*		*70 - 130*

Lab Sample ID: LCSD 880-38417/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38323 — **Prep Batch: 38417**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1087		mg/Kg		109	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	910.4		mg/Kg		91	70 - 130	10	20

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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

Lab Sample ID: LCSD 880-38417/3-A
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38417

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	95		70 - 130

Lab Sample ID: 890-3335-A-1-C MS
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	812.4		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)	77.7	F1	997	799.4		mg/Kg		72	70 - 130		

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

Lab Sample ID: 890-3335-A-1-D MSD
Matrix: Solid
Analysis Batch: 38323

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38417

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	984.3		mg/Kg		96	70 - 130	19	20
Diesel Range Organics (Over C10-C28)	77.7	F1	999	702.0	F1	mg/Kg		62	70 - 130	13	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	76		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37579/1-A
Matrix: Solid
Analysis Batch: 37788

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/25/22 19:00	1

Lab Sample ID: LCS 880-37579/2-A
Matrix: Solid
Analysis Batch: 37788

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.4		mg/Kg		97	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-37579/3-A
Matrix: Solid
Analysis Batch: 37788

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	243.5		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 890-3261-3 MS
Matrix: Solid
Analysis Batch: 37788

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	3160		1260	4301		mg/Kg		91	90 - 110		

Lab Sample ID: 890-3261-3 MSD
Matrix: Solid
Analysis Batch: 37788

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3160		1260	4415		mg/Kg		100	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Total/NA	Solid	5035	
890-3261-2	PH01	Total/NA	Solid	5035	
890-3261-3	PH01	Total/NA	Solid	5035	
890-3261-4	PH01	Total/NA	Solid	5035	
890-3261-5	PH01	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Total/NA	Solid	8021B	37911
890-3261-2	PH01	Total/NA	Solid	8021B	37911
890-3261-3	PH01	Total/NA	Solid	8021B	37911
890-3261-4	PH01	Total/NA	Solid	8021B	37911
890-3261-5	PH01	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Total/NA	Solid	Total BTEX	
890-3261-2	PH01	Total/NA	Solid	Total BTEX	
890-3261-3	PH01	Total/NA	Solid	Total BTEX	
890-3261-4	PH01	Total/NA	Solid	Total BTEX	
890-3261-5	PH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Total/NA	Solid	8015B NM	37617
890-3261-2	PH01	Total/NA	Solid	8015B NM	37617
890-3261-3	PH01	Total/NA	Solid	8015B NM	37617
MB 880-37617/1-A	Method Blank	Total/NA	Solid	8015B NM	37617
LCS 880-37617/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37617
LCSD 880-37617/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37617
890-3253-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	37617
890-3253-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37617

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

GC Semi VOA

Prep Batch: 37617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Total/NA	Solid	8015NM Prep	
890-3261-2	PH01	Total/NA	Solid	8015NM Prep	
890-3261-3	PH01	Total/NA	Solid	8015NM Prep	
MB 880-37617/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37617/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37617/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3253-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3253-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Total/NA	Solid	8015 NM	
890-3261-2	PH01	Total/NA	Solid	8015 NM	
890-3261-3	PH01	Total/NA	Solid	8015 NM	
890-3261-4	PH01	Total/NA	Solid	8015 NM	
890-3261-5	PH01	Total/NA	Solid	8015 NM	

Analysis Batch: 38323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-4	PH01	Total/NA	Solid	8015B NM	38417
890-3261-5	PH01	Total/NA	Solid	8015B NM	38417
MB 880-38417/1-A	Method Blank	Total/NA	Solid	8015B NM	38417
LCS 880-38417/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38417
LCSD 880-38417/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38417
890-3335-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38417
890-3335-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38417

Prep Batch: 38417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-4	PH01	Total/NA	Solid	8015NM Prep	
890-3261-5	PH01	Total/NA	Solid	8015NM Prep	
MB 880-38417/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38417/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38417/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3335-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3335-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 37579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Soluble	Solid	DI Leach	
890-3261-2	PH01	Soluble	Solid	DI Leach	
890-3261-3	PH01	Soluble	Solid	DI Leach	
890-3261-4	PH01	Soluble	Solid	DI Leach	
890-3261-5	PH01	Soluble	Solid	DI Leach	
MB 880-37579/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3261-3 MS	PH01	Soluble	Solid	DI Leach	
890-3261-3 MSD	PH01	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

HPLC/IC

Analysis Batch: 37788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3261-1	PH01	Soluble	Solid	300.0	37579
890-3261-2	PH01	Soluble	Solid	300.0	37579
890-3261-3	PH01	Soluble	Solid	300.0	37579
890-3261-4	PH01	Soluble	Solid	300.0	37579
890-3261-5	PH01	Soluble	Solid	300.0	37579
MB 880-37579/1-A	Method Blank	Soluble	Solid	300.0	37579
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	300.0	37579
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37579
890-3261-3 MS	PH01	Soluble	Solid	300.0	37579
890-3261-3 MSD	PH01	Soluble	Solid	300.0	37579

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Client Sample ID: PH01
Date Collected: 10/20/22 11:50
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3261-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	38089	10/29/22 08:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38195	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37809	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	37617	10/24/22 08:52	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37611	10/24/22 16:50	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		5			37788	10/25/22 21:06	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/20/22 11:55
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3261-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	38089	10/29/22 08:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38195	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37809	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	37617	10/24/22 08:52	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37611	10/24/22 17:11	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		20			37788	10/25/22 21:14	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/20/22 12:00
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3261-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	38089	10/29/22 09:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38195	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37809	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37617	10/24/22 08:52	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37611	10/24/22 17:31	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		5			37788	10/25/22 21:23	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/20/22 12:10
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3261-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 07:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38195	10/30/22 21:36	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Client Sample ID: PH01
Date Collected: 10/20/22 12:10
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3261-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			37809	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38417	11/01/22 15:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38323	11/02/22 05:47	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		50			37788	10/25/22 21:48	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/20/22 12:20
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3261-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 08:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38195	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37809	10/25/22 11:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38417	11/01/22 15:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38323	11/02/22 06:08	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		10			37788	10/25/22 21:56	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3261-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3261-1	PH01	Solid	10/20/22 11:50	10/21/22 10:55	2'
890-3261-2	PH01	Solid	10/20/22 11:55	10/21/22 10:55	3'
890-3261-3	PH01	Solid	10/20/22 12:00	10/21/22 10:55	4'
890-3261-4	PH01	Solid	10/20/22 12:10	10/21/22 10:55	6'
890-3261-5	PH01	Solid	10/20/22 12:20	10/21/22 10:55	7'

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Chain of Custody

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

Work Order No: _____

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Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, 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:	JRU 108H	Turn Around	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	EDDY COUNTY, NM	Due Date:	
Sampler's Name:	Ben Belill	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TAM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.4
Total Containers:		Corrected Temperature:	1.2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH01	S	10/20/2022	1150	2'	Grab/	1		X	X	X
PH01	S	10/20/2022	1155	3'	Grab/	1		X	X	X
PH01	S	10/20/2022	1200	4'	Grab/	1		X	X	X
PH01	S	10/20/2022	1210	6'	Grab/	1		X	X	X
PH01	S	10/20/2022	1220	7'	Grab/	1		X	X	X

890-3261 Chain of Custody

Preservative Codes

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

Sample Comments

Cost Center: 1139071001

Incident Number: ~~NAPP2217931599~~

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Amanda Stept	10/21/20 1035			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3261-1
SDG Number: 03E1558090

Login Number: 3261
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3261-1
SDG Number: 03E1558090

Login Number: 3261
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/24/22 07:56 AM

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

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3262-1
Laboratory Sample Delivery Group: 03E1558090
Client Project/Site: JRU 108H

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

Attn: Ben Belill

JKramer

Authorized for release by:
10/31/2022 9:40:22 AM

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

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

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

Client: Ensolum
Project/Site: JRU 108H

Laboratory Job ID: 890-3262-1
SDG: 03E1558090

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Definitions/Glossary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Job ID: 890-3262-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3262-1

Receipt
The samples were received on 10/21/2022 10:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH02 (890-3262-1), PH02 (890-3262-2), PH02 (890-3262-3) and PH02 (890-3262-4).

GC VOA
Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control 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 spiking solution was inadvertently omitted during the extraction process for the laboratory control sample (LCS) associated with preparation batch 880-37769; therefore, percent recoveries are unavailable. The LCSD and MS/MSD will show acceptability for the batch, therefore data was qualified and reported.

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: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Client Sample ID: PH02

Lab Sample ID: 890-3262-1
Matrix: Solid
Date Collected: 10/20/22 13:50
Date Received: 10/21/22 10:55
Sample Depth: 2'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 04:19	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 04:19	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 04:19	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/26/22 14:13	10/29/22 04:19	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/26/22 14:13	10/29/22 04:19	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/26/22 14:13	10/29/22 04:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*	*10/26/22 14:13*	*10/29/22 04:19*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*10/26/22 14:13*	*10/29/22 04:19*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**63.5**		49.9		mg/Kg			10/26/22 11:59	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *- *1	49.9		mg/Kg		10/25/22 08:30	10/25/22 13:41	1
Diesel Range Organics (Over C10-C28)	**63.5**	***- *1**	49.9		mg/Kg		10/25/22 08:30	10/25/22 13:41	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/25/22 08:30	10/25/22 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*10/25/22 08:30*	*10/25/22 13:41*	*1*
o-Terphenyl	*94*		*70 - 130*	*10/25/22 08:30*	*10/25/22 13:41*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13600**		100		mg/Kg			10/25/22 22:21	20

Client Sample ID: PH02

Lab Sample ID: 890-3262-2
Matrix: Solid
Date Collected: 10/20/22 14:00
Date Received: 10/21/22 10:55
Sample Depth: 4'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 04:40	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 04:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 04:40	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/26/22 14:13	10/29/22 04:40	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 04:40	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/26/22 14:13	10/29/22 04:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*130*		*70 - 130*	*10/26/22 14:13*	*10/29/22 04:40*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Client Sample ID: PH02

Lab Sample ID: 890-3262-2
Matrix: Solid
Date Collected: 10/20/22 14:00
Date Received: 10/21/22 10:55
Sample Depth: 4'

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 04:40*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/26/22 11:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *- *1	49.9	mg/Kg		10/25/22 08:30	10/25/22 14:02	1
Diesel Range Organics (Over C10-C28)	<49.9	U *- *1	49.9	mg/Kg		10/25/22 08:30	10/25/22 14:02	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/25/22 08:30	10/25/22 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*10/25/22 08:30*	*10/25/22 14:02*	*1*
o-Terphenyl	*93*		*70 - 130*	*10/25/22 08:30*	*10/25/22 14:02*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22100**		249	mg/Kg			10/25/22 22:30	50

Client Sample ID: PH02

Lab Sample ID: 890-3262-3
Matrix: Solid
Date Collected: 10/20/22 14:05
Date Received: 10/21/22 10:55
Sample Depth: 5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 06:05	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 06:05	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 06:05	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 06:05	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 06:05	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 06:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*10/26/22 14:13*	*10/29/22 06:05*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*10/26/22 14:13*	*10/29/22 06:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/26/22 11:59	1

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Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Client Sample ID: PH02

Lab Sample ID: 890-3262-3
Matrix: Solid
Date Collected: 10/20/22 14:05
Date Received: 10/21/22 10:55
Sample Depth: 5'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *- *1	49.9		mg/Kg		10/25/22 08:30	10/25/22 14:23	1
Diesel Range Organics (Over C10-C28)	<49.9	U *- *1	49.9		mg/Kg		10/25/22 08:30	10/25/22 14:23	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/25/22 08:30	10/25/22 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*10/25/22 08:30*	*10/25/22 14:23*	*1*
o-Terphenyl	*98*		*70 - 130*	*10/25/22 08:30*	*10/25/22 14:23*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6400**		50.1		mg/Kg			10/25/22 22:38	10

Client Sample ID: PH02

Lab Sample ID: 890-3262-4
Matrix: Solid
Date Collected: 10/20/22 14:15
Date Received: 10/21/22 10:55
Sample Depth: 7'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		10/26/22 14:13	10/29/22 06:26	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/26/22 14:13	10/29/22 06:26	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/26/22 14:13	10/29/22 06:26	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		10/26/22 14:13	10/29/22 06:26	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		10/26/22 14:13	10/29/22 06:26	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		10/26/22 14:13	10/29/22 06:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*10/26/22 14:13*	*10/29/22 06:26*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/26/22 14:13*	*10/29/22 06:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			10/26/22 11:59	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *- *1	50.0		mg/Kg		10/25/22 08:30	10/25/22 14:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U *- *1	50.0		mg/Kg		10/25/22 08:30	10/25/22 14:44	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/25/22 08:30	10/25/22 14:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*10/25/22 08:30*	*10/25/22 14:44*	*1*
o-Terphenyl	*91*		*70 - 130*	*10/25/22 08:30*	*10/25/22 14:44*	*1*

Client Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Client Sample ID: PH02
Date Collected: 10/20/22 14:15
Date Received: 10/21/22 10:55
Sample Depth: 7'

Lab Sample ID: 890-3262-4
Matrix: Solid

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5550		50.2		mg/Kg			10/25/22 22:46	10

Surrogate Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-20605-A-1-E MS	Matrix Spike	101	92
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90
890-3262-1	PH02	120	97
890-3262-2	PH02	130	102
890-3262-3	PH02	115	96
890-3262-4	PH02	123	92
LCS 880-37911/1-A	Lab Control Sample	99	91
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91
MB 880-37911/5-A	Method Blank	102	87
MB 880-38021/5-A	Method Blank	72	60 S1-

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3262-1	PH02	89	94
890-3262-2	PH02	88	93
890-3262-3	PH02	91	98
890-3262-4	PH02	87	91
890-3263-A-1-C MS	Matrix Spike	89	80
890-3263-A-1-D MSD	Matrix Spike Duplicate	86	78
LCS 880-37769/2-A	Lab Control Sample	117	125
LCSD 880-37769/3-A	Lab Control Sample Dup	98	103
MB 880-37769/1-A	Method Blank	100	107

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*

Lab Sample ID: LCS 880-37911/1-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07484		mg/Kg		75	70 - 130		
Toluene			0.100	0.07671		mg/Kg		77	70 - 130		
Ethylbenzene			0.100	0.07425		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1480		mg/Kg		74	70 - 130		
o-Xylene			0.100	0.08609		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: LCSD 880-37911/2-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene			0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene			0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene			0.100	0.08950		mg/Kg		89	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 880-20605-A-1-E MS
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130		
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

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

Lab Sample ID: 880-20605-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-20605-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.06610	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00201	U F1	0.0990	0.06481	F1	mg/Kg		65	70 - 130	20	35
Ethylbenzene	<0.00201	U F1	0.0990	0.06337	F1	mg/Kg		64	70 - 130	19	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.1224	F1	mg/Kg		62	70 - 130	16	35
o-Xylene	<0.00201	U	0.0990	0.07052		mg/Kg		71	70 - 130	17	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: MB 880-38021/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 38021**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*
1,4-Difluorobenzene (Surr)	*60*	*S1-*	*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*

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

Lab Sample ID: MB 880-37769/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37764 — **Prep Batch: 37769**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/25/22 08:30	10/25/22 09:08	1

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

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

Lab Sample ID: MB 880-37769/1-A
Matrix: Solid
Analysis Batch: 37764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37769

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/25/22 08:30	10/25/22 09:08	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/25/22 08:30	10/25/22 09:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*10/25/22 08:30*	*10/25/22 09:08*	*1*
o-Terphenyl	*107*		*70 - 130*	*10/25/22 08:30*	*10/25/22 09:08*	*1*

Lab Sample ID: LCS 880-37769/2-A
Matrix: Solid
Analysis Batch: 37764

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37769

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	16.63	J *-	mg/Kg		2	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	16.30	J *-	mg/Kg		2	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*117*		*70 - 130*
o-Terphenyl	*125*		*70 - 130*

Lab Sample ID: LCSD 880-37769/3-A
Matrix: Solid
Analysis Batch: 37764

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37769

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	802.8	*1	mg/Kg		80	70 - 130	192	20
Diesel Range Organics (Over C10-C28)			1000	841.9	*1	mg/Kg		84	70 - 130	192	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*98*		*70 - 130*
o-Terphenyl	*103*		*70 - 130*

Lab Sample ID: 890-3263-A-1-C MS
Matrix: Solid
Analysis Batch: 37764

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37769

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *1 *-	998	1230		mg/Kg		121	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U *1 *-	998	903.5		mg/Kg		91	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*89*		*70 - 130*
o-Terphenyl	*80*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

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

Lab Sample ID: 890-3263-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37764 — **Prep Batch: 37769**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *1 *-	998	1205		mg/Kg		119	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.8	U *1 *-	998	871.4		mg/Kg		87	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*86*		*70 - 130*
o-Terphenyl	*78*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37579/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/25/22 19:00	1

Lab Sample ID: LCS 880-37579/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.4		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-37579/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.5		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 890-3261-A-3-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	3160		1260	4301		mg/Kg		91	90 - 110		

Lab Sample ID: 890-3261-A-3-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37788

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3160		1260	4415		mg/Kg		100	90 - 110	3	20

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Total/NA	Solid	5035	
890-3262-2	PH02	Total/NA	Solid	5035	
890-3262-3	PH02	Total/NA	Solid	5035	
890-3262-4	PH02	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Total/NA	Solid	8021B	37911
890-3262-2	PH02	Total/NA	Solid	8021B	37911
890-3262-3	PH02	Total/NA	Solid	8021B	37911
890-3262-4	PH02	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Total/NA	Solid	Total BTEX	
890-3262-2	PH02	Total/NA	Solid	Total BTEX	
890-3262-3	PH02	Total/NA	Solid	Total BTEX	
890-3262-4	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Total/NA	Solid	8015B NM	37769
890-3262-2	PH02	Total/NA	Solid	8015B NM	37769
890-3262-3	PH02	Total/NA	Solid	8015B NM	37769
890-3262-4	PH02	Total/NA	Solid	8015B NM	37769
MB 880-37769/1-A	Method Blank	Total/NA	Solid	8015B NM	37769
LCS 880-37769/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37769
LCSD 880-37769/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37769
890-3263-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37769
890-3263-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37769

Prep Batch: 37769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

GC Semi VOA (Continued)

Prep Batch: 37769 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-2	PH02	Total/NA	Solid	8015NM Prep	
890-3262-3	PH02	Total/NA	Solid	8015NM Prep	
890-3262-4	PH02	Total/NA	Solid	8015NM Prep	
MB 880-37769/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37769/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37769/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3263-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3263-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Total/NA	Solid	8015 NM	
890-3262-2	PH02	Total/NA	Solid	8015 NM	
890-3262-3	PH02	Total/NA	Solid	8015 NM	
890-3262-4	PH02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Soluble	Solid	DI Leach	
890-3262-2	PH02	Soluble	Solid	DI Leach	
890-3262-3	PH02	Soluble	Solid	DI Leach	
890-3262-4	PH02	Soluble	Solid	DI Leach	
MB 880-37579/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3261-A-3-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3261-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3262-1	PH02	Soluble	Solid	300.0	37579
890-3262-2	PH02	Soluble	Solid	300.0	37579
890-3262-3	PH02	Soluble	Solid	300.0	37579
890-3262-4	PH02	Soluble	Solid	300.0	37579
MB 880-37579/1-A	Method Blank	Soluble	Solid	300.0	37579
LCS 880-37579/2-A	Lab Control Sample	Soluble	Solid	300.0	37579
LCSD 880-37579/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37579
890-3261-A-3-B MS	Matrix Spike	Soluble	Solid	300.0	37579
890-3261-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37579

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Client Sample ID: PH02
Date Collected: 10/20/22 13:50
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3262-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 04:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38192	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37884	10/26/22 11:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37769	10/25/22 08:30	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37764	10/25/22 13:41	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		20			37788	10/25/22 22:21	CH	EET MID

Client Sample ID: PH02
Date Collected: 10/20/22 14:00
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3262-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 04:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38192	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37884	10/26/22 11:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37769	10/25/22 08:30	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37764	10/25/22 14:02	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		50			37788	10/25/22 22:30	CH	EET MID

Client Sample ID: PH02
Date Collected: 10/20/22 14:05
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3262-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 06:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38192	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37884	10/26/22 11:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37769	10/25/22 08:30	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37764	10/25/22 14:23	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		10			37788	10/25/22 22:38	CH	EET MID

Client Sample ID: PH02
Date Collected: 10/20/22 14:15
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3262-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 06:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38192	10/30/22 21:36	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Client Sample ID: PH02

Date Collected: 10/20/22 14:15
Date Received: 10/21/22 10:55

Lab Sample ID: 890-3262-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			37884	10/26/22 11:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	37769	10/25/22 08:30	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37764	10/25/22 14:44	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	37579	10/22/22 12:59	SMC	EET MID
Soluble	Analysis	300.0		10			37788	10/25/22 22:46	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

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: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: JRU 108H

Job ID: 890-3262-1
SDG: 03E1558090

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3262-1	PH02	Solid	10/20/22 13:50	10/21/22 10:55	2'
890-3262-2	PH02	Solid	10/20/22 14:00	10/21/22 10:55	4'
890-3262-3	PH02	Solid	10/20/22 14:05	10/21/22 10:55	5'
890-3262-4	PH02	Solid	10/20/22 14:15	10/21/22 10:55	7'

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Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum, LLC	Company Name:	XTO Energy, 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:

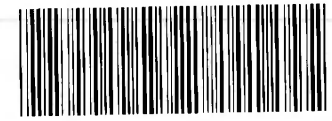
Project Name:	JRU 108H	Turn Around	
Project Number:	03E1558090	☑ Routine ☐ Rush	
Project Location:	EDDY COUNTY, NM	Due Date:	
Sampler's Name:	Ben Belill	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	Tnm-001
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	1.4
Total Containers:		Corrected Temperature:	1.2

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
PH02	S	10/20/2022	1350	2'	Grab/	1		X	X	X
PH02	S	10/20/2022	1400	4'	Grab/	1		X	X	X
PH02	S	10/20/2022	1405	5'	Grab/	1		X	X	X
PH02	S	10/20/2022	1415	7'	Grab/	1		X	X	X

Parameters



Preservative Codes

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

Sample Comments

Cost Center: 1139071001

Incident Number: NAPP2217931599

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		Amanda Stuff	10/21/22 0925	2		
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3262-1
SDG Number: 03E1558090

Login Number: 3262
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3262-1
SDG Number: 03E1558090

Login Number: 3262
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/24/22 07:56 AM

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

ENSOLUM

APPENDIX E

NMOCD Notifications

From: Hamlet, Robert, EMNRD
To: Collins, Melanie
Cc: DelawareSpills /SM; Green, Garrett J; Ben Belill; Ashley Ager; Tacoma Morrissey; Kalei Jennings; Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject: (Extension Approval) - James Ranch Unit 108H - Incident Number NAPP221793159
Date: Monday, September 19, 2022 3:21:36 PM
Attachments: image003.png

[**EXTERNAL EMAIL**]

RE: Incident #**NAPP2217931599**

Melanie,

Your request for an extension to **December 19th, 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
506 W. Texas Ave.| Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Monday, September 19, 2022 12:04 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; mike.bratcher@state.nm.us; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; bbelill@ensolum.com; Ashley Ager <aager@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; Kalei Jennings <kjennings@ensolum.com>
Subject: [EXTERNAL] XTO - Extension Request - James Ranch Unit 108H - Incident Number NAPP2217931599

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

All,

XTO – Extension Request – James Ranch Unit 108H – Incident Number nAPP2217931599
XTO is requesting an extension for the current deadline of September 20, 2022 for submitting a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC at the James Ranch

Unit 108H (Incident Number NAPP2217931599). The release occurred on June 22, 2022, and initial site assessment activities were completed July 26, 2022. Additional delineation activities were completed last week and are pending laboratory analytical results. In order to review the laboratory analytical results, discuss remedial options, and submit a remediation work plan or closure report, XTO requests an extension until December 19, 2022.

Thank you,

Melanie Collins

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

Ben Belill

From: Tacoma Morrissey
Sent: Wednesday, December 14, 2022 1:49 PM
To: Ben Belill
Subject: FW: XTO - Sampling Notification (Week of 10/17/22 - 10/21/22)

See below!

Tacoma Morrissey
Senior Geologist
337-257-8307
Ensolum, LLC

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Monday, October 17, 2022 11:21 AM
To: ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>
Subject: XTO - Sampling Notification (Week of 10/17/22 - 10/21/22)

[**EXTERNAL EMAIL**]

All,

Please see the update below to this week's sampling schedule. XTO plans to complete final sampling activities at the following sites the week of Oct 17, 2022.

Monday
- BEU 29W Vader 100H / nAPP2102831345

Tuesday
- BEU 29W Vader 100H / nAPP2102831345
- PLU 21 BD 125H/ nAPP2214547737

Wednesday
- BEU 29W Vader 100H / nAPP2102831345
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

Thursday
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301
- JRU 108 / nAPP2217931599
- JRU 106 / nAPP2212344322

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 168318

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 168318
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	The Remediation Plan is Conditionally Approved. This release is in a high karst area and will need to be remediated to the strictest closure criteria from Table 1 of the OCD Spill Rule. Please collect confirmation samples, representing no more than 200 ft2. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. All background samples should be collected in 1-foot increments down to the depth equivalent to the deepest depth of the excavation. The five background numbers at a depth of 1 foot should be averaged. The five background numbers at a depth of 2 feet should be averaged and so on. The composite numbers will be used for the final background numbers. The work will need to occur in 90 days after the work plan has been reviewed.	4/28/2023