

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	NAPP2232250506
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 32.15266 Longitude -104.01722
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Golden Child SWD	Site Type Salt Water Disposal
Date Release Discovered 11/09/2022	API# (if applicable)

Unit Letter	Section	Township	Range	County
P	6	25S	29E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 39.19	Volume Recovered (bbls) 30.00
	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 Damaged threads caused a 2" nipple to release produced water to pad surface. Vac truck was dispatched and recovered all free standing fluids. A third party contractor has been retained for remediation purposes.

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? A release equal to or greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Garrett Green to Mike Bratcher, Robert Hamlet, Jocelyn Harimon and ocd.enviro@emnrd.nm.gov on 11/10/2022 via email.	

Initial Response

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

☒ The source of the release has been stopped. ☒ The impacted area has been secured to protect human health and the environment. ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. ☒ All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: NA	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Garrett Green</u>	Title: <u>SSHE Coordinator</u>
Signature: <u></u>	Date: <u>11/18/2022</u>
email: <u>garrett.green@exxonmobil.com</u>	Telephone: <u>575-200-0729</u>
<u>OCD Only</u>	
Received by: <u>Jocelyn Harimon</u>	Date: <u>11/18/2022</u>

Location:	Golden Child	
Spill Date:	11/9/2022	
Area 1		
Approximate Area =	29715.00	sq. ft.
Average Saturation (or depth) of spill =	0.50	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	15.62	bbls
Area 2		
Approximate Area =	8034.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches
Average Porosity Factor =	0.15	
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	17.89	bbls
Area 3		
Approximate Area =	12747.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches
Average Porosity Factor =	0.03	
VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	5.68	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	0.00	bbls
Total Produced Water =	39.19	bbls
TOTAL VOLUME RECOVERED		
Total Crude Oil =	0.00	bbls
Total Produced Water =	9.00	bbls

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1625 N. French Dr., Hobbs, NM 88240
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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 160133

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 160133
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	11/18/2022

Incident ID	NAPP2232250506
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Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>< 50 (ft bgs)</u>
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

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

State of New Mexico
Oil Conservation Division

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Printed Name: _Garrett Green_____ Title: _Environmental Coordinator_____

Signature:  Date: ___5/3/2023_____

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

OCD Only

Received by: _____ Jocelyn Harimon _____ Date: ___05/08/2023_____

Incident ID	NAPP2232250506
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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:  Date: 5/3/2023
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 05/08/2023

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

Signature: _____ Date: _____

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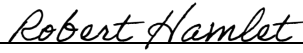
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Printed Name: Garrett Green Title: Environmental Coordinator
Signature:  Date: 5/3/2023
email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Jocelyn Harimon Date: 05/08/2023

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

Signature:  Date: 9/25/2023



May 3, 2023

New Mexico Oil Conservation Division

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

**Re: Remediation Work Plan
Golden Child SWD
Incident Number NAPP2232250506
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 Golden Child SWD (Site). Soil was impacted due to a release of produced water. Based on delineation activities and soil sample laboratory analytical results, XTO is submitting this *Work Plan* describing remediation actions completed to date and proposing excavation of impacted soil and investigation of naturally occurring chloride concentrations within the shallow caliche and sandstone formations identified in the area.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit P, Section 6, Township 25 South, Range 29 East, in Eddy County, New Mexico (32.15266°, -104.01722°) and is associated with oil and gas exploration and production operations on State Land managed by the New Mexico State Land Office (SLO).

On November 9, 2022, a nipple connected to a produced water pipeline valve failed, resulting in the release of 39.19 barrels (bbls) of produced water onto the surface of the well pad, across an access road, into adjacent pasture near several active pipelines, and onto another well pad located south of the Site. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 30.00 bbls of produced water were recovered. XTO immediately reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on November 10, 2022 and submitted a Release Notification Form C-141 (Form C-141) on November 18, 2022. The release was assigned Incident Number NAPP2232250506.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Depth to groundwater at the Site is estimated to be less than 50 feet below ground surface (bgs) based on a soil boring drilled for determination of regional groundwater depth. On November 18, 2020, a soil boring permitted by New Mexico Office of the State Engineer (NMOSE file number C-04493) was completed approximately 200 feet southeast of the Site utilizing a truck-mounted hollow-stem auger rig. Soil boring C-04493 was drilled to a depth of 57 feet bgs. A field geologist logged and described soils continuously. The borehole was left open for over 72 hours to allow for potential slow infill of

XTO Energy, Inc
Remediation Work Plan
Golden Child SWD

groundwater. After the 72-hour waiting period, it was confirmed that groundwater beneath the Site is approximately 39 feet bgs. The borehole was properly abandoned with grout. The Well Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is the Pecos River, located approximately 1,936 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area).

Based on the estimation of groundwater less than 50 feet bgs at 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

SITE ASSESSMENT ACTIVITIES

On January 10, 2023, Ensolum personnel completed a Site assessment to evaluate the release extent based on information provided on the Form C-141 and visual observations. Twelve delineation soil samples (SS01 through SS12) were collected within the release extent at a depth of approximately 0.5 feet bgs to confirm the presence or absence of impacts to soil. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing 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-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they were collected may not have equilibrated to 6 degrees Celcius required for shipment and long term storage, but are considered to have been received in acceptable condition by the laboratory.

DELINEATION AND SOIL SAMPLING ACTIVITIES

Between January 19 and 23, 2023, Ensolum returned to the Site to continue delineation activities. Nine potholes (PH01, PH03 through PH10) were advanced by use of heavy equipment and hand auger to assess the vertical extent of the release. Potholes PH01 and PH03 through PH10 were collected in the vicinity of delineation soil samples SS01 and SS03 through SS10, respectively. A pothole was not advanced in the vicinity of SS02 due to the close proximity, field screening results consistency, and depths of potholes SS01/PH01 and SS03/PH03. Potholes PH01 and PH03 were advanced within the

XTO Energy, Inc
Remediation Work Plan
Golden Child SWD

release extent on the northern well pad to depths of 16 feet bgs. Potholes PH09 and PH10 were advanced within the release extent on the southern well pad to depths of 16 feet and 10 feet bgs, respectively. Potholes PH04 through PH08 are located within the release extent between the two well pads, near an access road and in a disturbed pasture area near active pipelines. Potholes PH04 through PH08 were advanced to auger refusal, which ranged from 2 feet to 4 feet bgs. Discrete delineation soil samples were collected from each pothole at depths ranging from 1-foot to 16 feet bgs. All delineation soil samples were field screened, handled, and analyzed as described above. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil sample locations are depicted on Figure 2.

While assessing the release extent, Ensolum observed a sandstone formation in the northern portion of the release area in the vicinity of potholes PH01 and PH03 and observed caliche and sandstone formations in the southern portion of the release area in the vicinity of potholes PH09 and PH10. These formations exhibited elevated (greater than 1,000 mg/kg) chloride field screening results. In potholes PH05 through PH07, advanced within the release extent in the pasture area between the two well pads, Ensolum observed chloride concentrations below 600 mg/kg in the sandy shallower depths but elevated chloride concentrations when encountering the underlying sandstone formation.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results indicated TPH concentrations exceeded the Site Closure Criteria in soil sample SS12, collected at 0.5 feet bgs. Laboratory analytical results for all other delineation soil samples collected indicated benzene, BTEX, and TPH concentrations were in compliance with the Site Closure Criteria. While chloride concentrations were variable throughout, laboratory analytical results indicated some consistencies within each soil/bedrock formation identified on-Site. These results include:

- Chloride concentrations ranging from 1,150 mg/kg to 6,770 mg/kg within the caliche fill material on the surface;
- Chloride concentrations ranging from 55.1 mg/kg to 4,100 mg/kg within the poorly graded pasture sand; and
- Chloride concentrations ranging from 1,060 mg/kg to 3,990 mg/kg within the caliche and sandstone.

The chloride concentration consistencies identified in the caliche and sandstone formation, and the depths at which potholes PH01, PH03, PH09, and PH10 were advanced to, indicate the potential existence of naturally occurring chloride within these formations. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix D.

PROPOSED REMEDIATION WORK PLAN

Based on the presence of elevated TPH concentrations in soil sample SS12, collected within the release extent on the southern well pad, XTO proposes excavation of TPH impacted soil exceeding the Site Closure Criteria. Based on field screening and laboratory analytical results, the excavation will proceed to approximately 1-foot bgs. Following removal of the soil, Ensolum personnel will collect 5-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.

XTO Energy, Inc
Remediation Work Plan
Golden Child SWD

Based on the laboratory analytical results for chloride in samples collected within the caliche and sandstone formations, Ensolum suggests there is potential for naturally occurring elevated chloride concentrations within one or more of these formations. To evaluate naturally occurring chloride in the identified caliche and sandstone formations, XTO proposes to advance four background potholes (BG01 through BG04) in undisturbed pasture areas located in multiple directions from the release extent. The locations proposed are as close as possible to the release but outside of disturbed areas. The proposed background pothole locations are depicted on Figure 2. XTO reserves the right to adjust any or all proposed background locations, if warranted, due to Site logistics such as heavy equipment crossing active pipeline right-of-ways. XTO does not anticipate any adjustment greater than 20 feet from the original proposed location. Soil samples will be collected from each background pothole at 1-foot intervals and will include the sandstone formation, the caliche formation where present, and the overlying pasture 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 and sandstone formations have been collected to document naturally occurring conditions. The background soil samples will be handled as described above and analyzed at the laboratory for chloride only.

Following excavation of TPH-impacted soil within the southern well pad release extent and completion of background soil sampling, XTO will submit a report requesting closure based on removal of TPH-impacted soil and confirmation of elevated naturally occurring chloride concentrations 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



Daniel R. Moir, PG
Senior Managing Geologist

cc: Garrett Green, XTO
Shelby Pennington, XTO
SLO

Appendices:

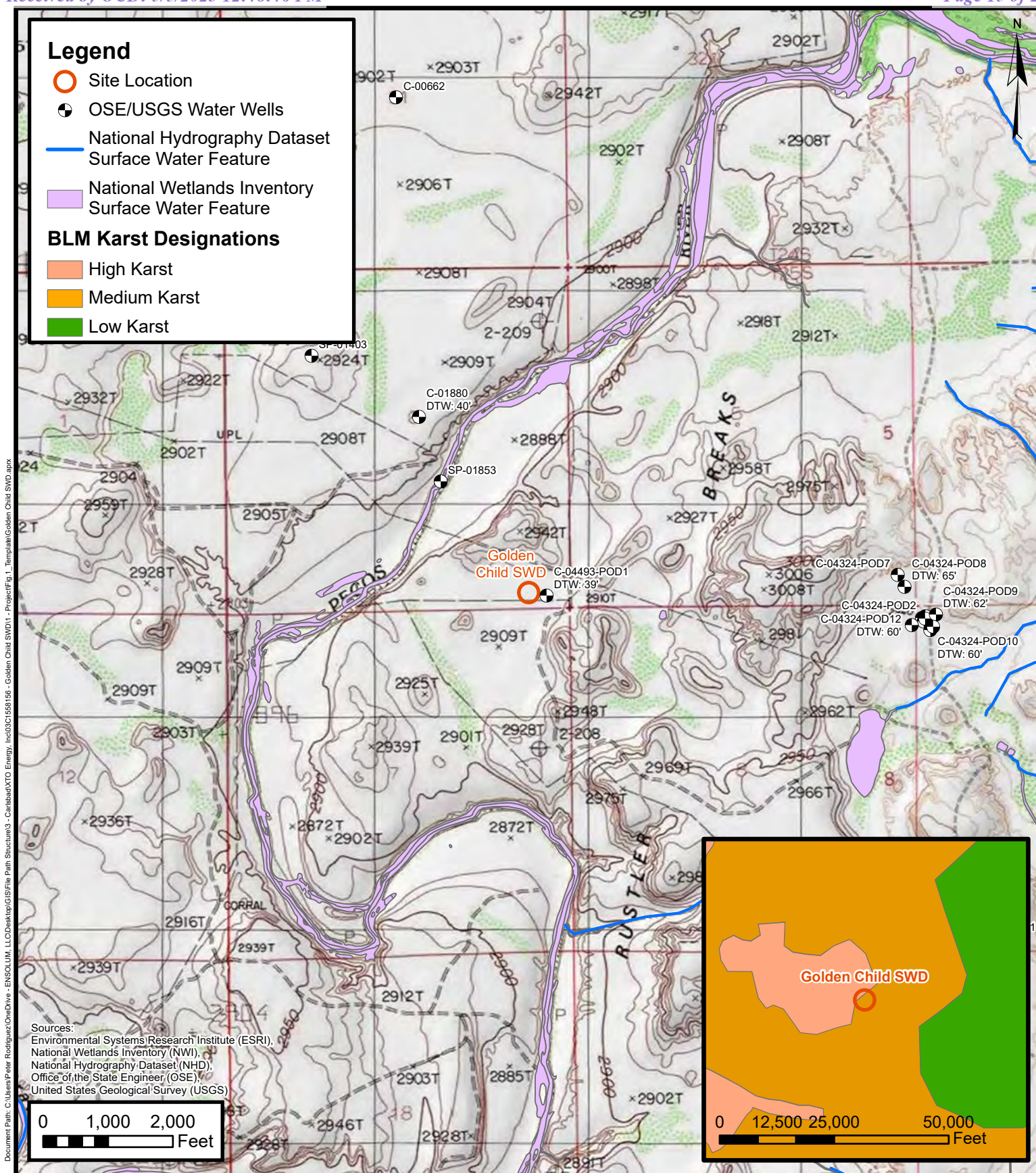
Figure 1 Site Receptor Map
Figure 2 Delineation Soil Sample Locations
Table 1 Soil Sample Analytical Results

XTO Energy, Inc
Remediation Work Plan
Golden Child SWD

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

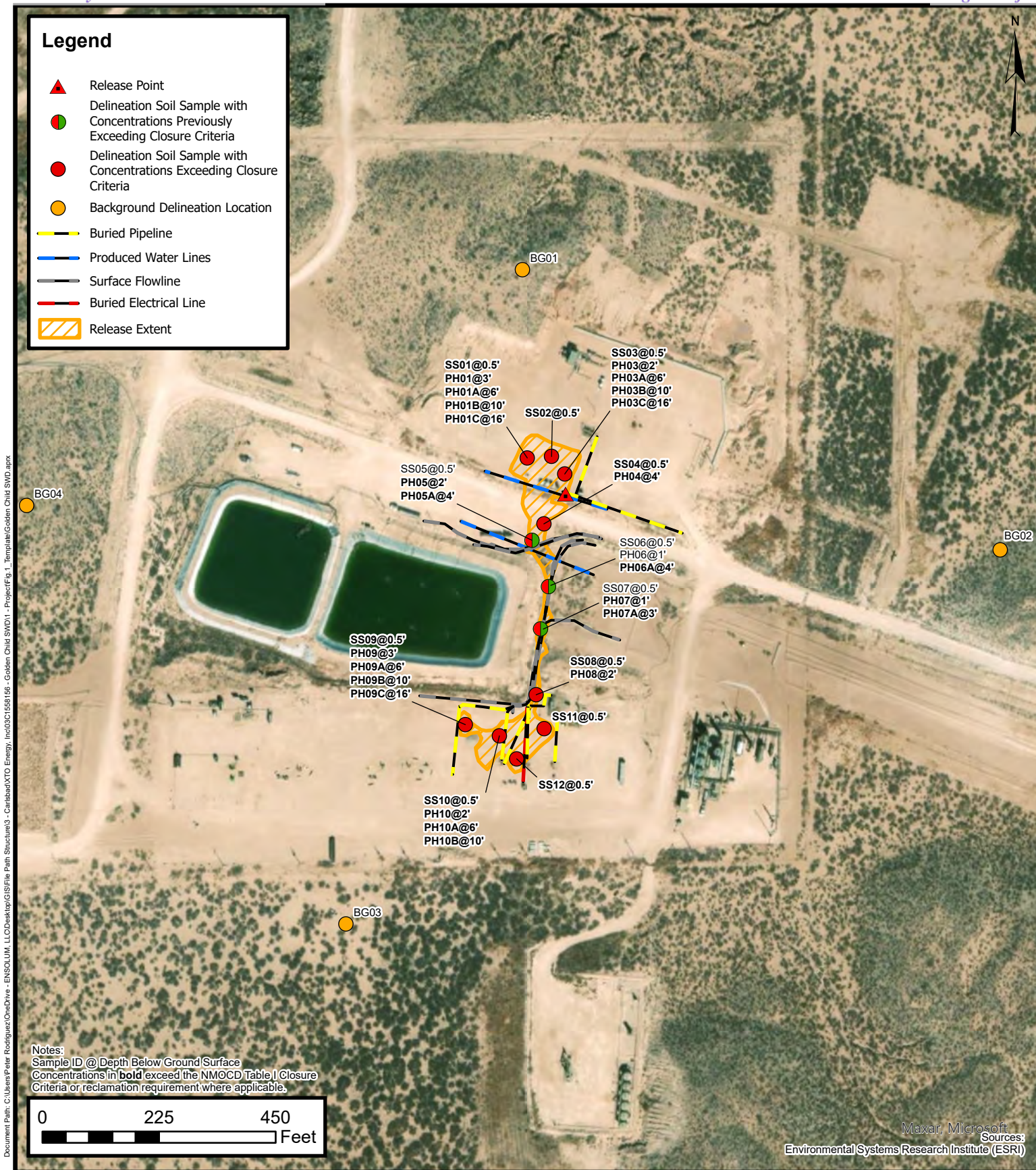


FIGURES



Eddy County, New Mexico

1



Delineation Soil Sample Locations

XTO Energy, Inc
Golden Child SWD
Incident Number: NAPP2232250506
Unit P, Sec 6, T25S R29E
Eddy County, New Mexico

FIGURE
2



TABLES



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
GOLDEN CHILD SWD
XTO ENERGY, INC
EDDY COUNTY, NEW MEXICO

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
Delineation Soil Samples										
SS01	01/10/2023	0.5	<0.00198	<0.00396	<49.8	81.0	<49.8	81.0	81.0	3,360
PH01	01/19/2023	3	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	1,640
PH01A	01/19/2023	6	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	2,370
PH01B	01/19/2023	10	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	1,330
PH01C	01/19/2023	16	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	1,820
SS02	01/10/2023	0.5	<0.00200	<0.00399	<49.9	64.5	<49.9	64.5	64.5	6,770
SS03	01/10/2023	0.5	<0.00201	<0.00402	<50.0	64.5	<50.0	64.5	64.5	2,670
PH03	01/19/2023	2	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	1,270
PH03A	01/19/2023	6	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH03B	01/20/2023	10	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	2,520
PH03C	01/20/2023	16	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	2,630
SS04	01/10/2023	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	1,620
PH04	01/23/2023	4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	1,180
SS05	01/10/2023	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	239
PH05	01/23/2023	2	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	3,610
PH05A	01/23/2023	4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	1,920
SS06	01/10/2023	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	55.1
PH06	01/23/2023	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	451
PH06A	01/23/2023	4	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	1,450
SS07	01/10/2023	0.5	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	368
PH07	01/23/2023	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	4,100
PH07A	01/23/2023	3	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	2,370



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
GOLDEN CHILD SWD
XTO ENERGY, INC
EDDY COUNTY, NEW MEXICO

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	NE	100	600
SS08	01/10/2023	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	2,610
PH08	01/23/2023	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	3,990
SS09	01/10/2023	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	2,080
PH09	01/20/2023	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	1,770
PH09A	01/20/2023	6	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	1,380
PH09B	01/20/2023	10	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	2,020
PH09C	01/20/2023	16	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	1,660
SS10	01/10/2023	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	1,160
PH10	01/20/2023	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	623
PH10A	01/20/2023	6	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	1,060
PH10B	01/20/2023	10	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	1,100
SS11	01/10/2023	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	1,150
SS12	01/10/2023	0.5	<0.00201	<0.00402	<49.9	110	<49.9	110	110	1,880

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 I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code



APPENDIX A

Referenced Well Record



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD1 (BH-01)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4493		
	WELL OWNER NAME(S) XTO Energy (Kyle Littrell)				PHONE (OPTIONAL)		
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE TX	ZIP 79707
	WELL LOCATION (FROM GPS)	LATITUDE	DEGREES 32°	MINUTES 9'	SECONDS 9.09" N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84	
		LONGITUDE	-104°	0'	58.81" W		
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SE NE SE Sec. 6 T25S R29E							

2. DRILLING & CASING INFORMATION	LICENSE NO. 1249	NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.			
	DRILLING STARTED 11/18/2020	DRILLING ENDED 11/18/2020	DEPTH OF COMPLETED WELL (FT) temporary well material	BORE HOLE DEPTH (FT) 57	DEPTH WATER FIRST ENCOUNTERED (FT) ±39			
	COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☒ SHALLOW (UNCONFINED)				STATIC WATER LEVEL IN COMPLETED WELL (FT) 37.05			
	DRILLING FLUID: ☒ AIR ☐ MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☒ OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	57	±8.5	Boring- HSA	--	--	--	--

3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
	FROM	TO				

FOR OSE INTERNAL USE

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

FILE NO. C-4484	POD NO. 1	TRN NO. 681638
LOCATION 444 T25S R29E Sub	WELL TAG ID NO. NA	PAGE 1 OF 2

	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)	
	FROM	TO					
4. HYDROGEOLOGIC LOG OF WELL	0	1	1	Caliche, Poorly consolidated, with gravel, Off -White -Light Brown	Y ✓ N		
	1	2	1	Sand, Very fine- grained,poorly-graded, with caliche ,Brown	Y ✓ N		
	2	14	12	Caliche, Moderately consolidated, with gravel, Off -White -Light Brown, Moist	Y ✓ N		
	14	29	15	Siltstone, poorly consolidated, low plasticity, cohesive, with sand, Brown, Moist	Y ✓ N		
	29	57	28	Silty Sandstone, Very fine-grained, well consolidated, trace pebbles, wet	✓ Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
					Y N		
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:					TOTAL ESTIMATED WELL YIELD (gpm):	0.00
	5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring plugged using Portland Type I/II neat cement 94 lbs sack per 5.2 gallons of water. Logs adapted from LTE on-site geologist. OSE DIT DEC 17 2020 PM 3:30							
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge							
6. SIGNATURE	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:						
				Jackie D. Atkins	12/15/20		
SIGNATURE OF DRILLER / PRINT SIGNEE NAME				DATE			

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 06/30/2017)	
FILE NO. C-4484	POD NO. 1	TRN NO. 681638	
LOCATION 444 T25R29E Sect 6	WELL TAG ID NO. NA	PAGE 2 OF 2	



APPENDIX B

Photographic Log



Photographic Log

XTO Energy, Inc

Golden Child SWD

Incident Number NAPP22322250506

Date & Time: Fri, Jan 10, 2023 at 09:54:18 MST
 Position: 632 1540627' N / 104 01 6658' W (=15.2 ft)
 Altitude: 2925 ft (=10.8 ft)
 Datum: WGS-84
 Azimuth Bearing: 209° S29W 591mils True (=12°)
 Elevation Angle: 46.0°
 Horizon Angle: 40.0°
 Zoom: 1.0X
 Golden Child release point looking south



Photograph 1 Date: 01/10/2023
 Description: Release Point and release extent area
 View: South

Date & Time: Fri, Jan 10, 2023 at 09:54:18 MST
 Position: 632 1540627' N / 104 01 6658' W (=15.2 ft)
 Altitude: 2925 ft (=10.8 ft)
 Datum: WGS-84
 Azimuth Bearing: 209° S29W 591mils True (=12°)
 Elevation Angle: 46.0°
 Horizon Angle: 40.0°
 Zoom: 1.0X
 Golden Child release point looking south



Photograph 2 Date: 01/10/2023
 Description: Release extent near southern pad.
 View: North

Date & Time: Fri, Jan 10, 2023 at 09:54:22 MST
 Position: 632 1540627' N / 104 01 6658' W (=15.2 ft)
 Altitude: 2925 ft (=10.8 ft)
 Datum: WGS-84
 Azimuth Bearing: 209° S29W 591mils True (=12°)
 Elevation Angle: 46.0°
 Horizon Angle: 40.0°
 Zoom: 1.0X
 Golden Child release extent on southern pad, looking east



Photograph 3 Date: 01/10/2023
 Description: Release extent on southern pad.
 View: East

Date & Time: Fri, Jan 20, 2023 at 09:00:00 MST
 Position: 632 1540700' N / 104 01 6740' W (=143.3 ft)
 Altitude: 2925 ft (=10.8 ft)
 Datum: WGS-84
 Azimuth Bearing: 209° S29W 1600mils True (=12°)
 Elevation Angle: 46.0°
 Horizon Angle: 40.0°
 Zoom: 1.0X
 Golden Child PH03



Photograph 4 Date: 01/20/2023
 Description: Delineation activities, PH03.
 View: Northeast

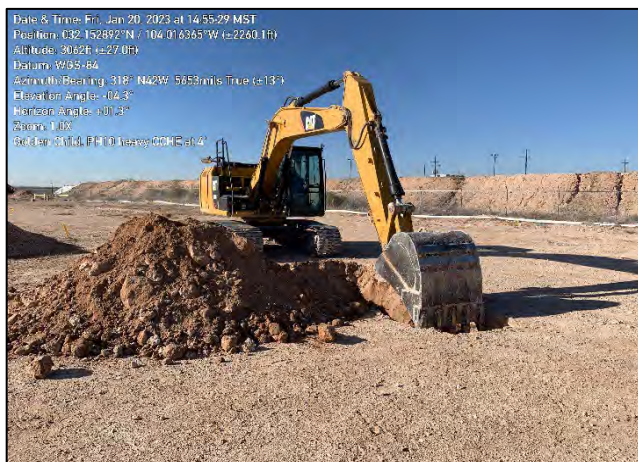


Photographic Log

XTO Energy, Inc

Golden Child SWD

Incident Number NAPP22322250506



Photograph 5

Date: 01/20/2023

Description: Delineation activities, PH10.

View: West



Photograph 6

Date: 01/23/2023

Description: Delineation activities, PH06.

View: South



APPENDIX C

Lithologic Soil Sampling Logs

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants								Sample Name: PH01		Date: 01/19/2023	
								Site Name: Golden Child SWD			
								Incident Number: nAPP2232250506			
								Job Number: 03C1558156			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Connor Whitman		Method: Trackhoe	
Coordinates: 32.154202,-104.016878								Hole Diameter: N/A		Total Depth: 16' bgs	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	3,180	0.7	N	SS01	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.			
Dry	1,590	0.9	N	PH01	1	2	SP-S	0.5'-16', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.			
Dry	1,831	0.7	N		2						
Dry	1,960	1.5	N		3						
Dry	2,100	2.1	N		4						
Moist	2,245	1.0	N	PH01A	5	6		10'-16', thin interbedded brown siltstone stringers.			
Moist	2,576	1.6	N		6						
Moist	1,808	1.5	N		7						
Moist	1,685	1.1	N		8						
Moist	1,260	1.6	N	PH01B	9	10					
Moist	1,573	1.0	N		10						
Moist	1,164	1.3	N		11						
Moist	1,461	0.9	N		12						
Moist	1,685	0.9	N	PH01C	14	14					
Moist	2,072	0.8	N		16						
Total Depth @ 16' bgs											

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants								Sample Name: PH03		Date: 01/19/2023	
								Site Name: Golden Child SWD			
								Incident Number: nAPP2232250506			
								Job Number: 03C1558156			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Connor Whitman		Method: Trackhoe	
Coordinates: 32.154113,-104.016651								Hole Diameter: N/A		Total Depth: 16' bgs	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	2,755	1.1	N	SS03	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.			
Dry	1,708	0.7	N	PH03	1	2	SP-S	0.5'-16', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.			
Dry	1,478	0.4	N		2						
					3						
Dry	2,402	0.9	N		4	4					
Moist	2,576	0.9	N	PH03A	6	6					
Moist	2,576	1.0	N		8	8					
Moist	2,956	0.3	N	PH03B	10	10		10'-16', thin interbedded brown siltstone stringers.			
Moist	2,245	0.1	N		12	12					
Moist	2,100	0.5	N		14	14					
Moist	2,402	0.4	N	PH03C	16	16					
Total Depth @ 16' bgs											

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH04		Date: 01/23/2023				
		Site Name: Golden Child SWD						
		Incident Number: nAPP2232250506						
		Job Number: 03C1558156						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.153856,-104.016779				Hole Diameter: 3.5"				
				Total Depth: 4' bgs				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	1,831	1.3	N	SS04	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.
Moist	2,402	0.0	N			1	SP	0.5'-3.5', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.
Moist	1,708	0.0	N			2		
Moist	1,478	0.0	N			3		
Moist	2,402	0.3	N	PH04	4	4	SP-S	3.5'-4', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.
Total Depth @ 4' bgs, auger refusal.								

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH05		Date: 01/23/2023				
		Site Name: Golden Child SWD						
		Incident Number: nAPP2232250506						
		Job Number: 03C1558156						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.153773,-104.016856				Logged By: Connor Whitman				
				Method: Hand Auger				
				Hole Diameter: 3.5"				
				Total Depth: 4.5' bgs				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	207	1.0	N	SS05	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.
Moist	907	0.1	N			1	SP	0.5'-3.5', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.
Moist	3,421	0.1	N	PH05	2	2		
Moist	1,002	0.0	N			3		
Moist	2,245	0.0	N	PH05A	4	4	SP-S	3.5'-4.5', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.
Total Depth @ 4.5' bgs, auger refusal.								

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants								Sample Name: PH06		Date: 01/23/2023	
								Site Name: Golden Child SWD			
								Incident Number: nAPP2232250506			
								Job Number: 03C1558156			
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: Connor Whitman		Method: Hand Auger	
Coordinates: 32.153520,-104.016764								Hole Diameter: 3.5"		Total Depth: 4.5' bgs	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.											
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions			
Dry	<168	0.4	N	SS06	0.5	0	SP	0-3.5', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.			
Moist	515	0.2	N	PH06	1	1					
Moist	845	0.1	N			2					
Moist	1,478	0.0	N			3					
Moist	2,245	0.1	N	PH06A	4	4	SP-S	3.5'-4.5', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.			
Total Depth @ 4.5' bgs, auger refusal.											

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH07		Date: 01/23/2023				
		Site Name: Golden Child SWD						
		Incident Number: nAPP2232250506						
		Job Number: 03C1558156						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.153291,-104.016803				Logged By: Connor Whitman				
				Method: Hand Auger				
				Hole Diameter: 3.5"				
				Total Depth: 3' bgs				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	459	1.2	N	SS07		0	SP	0-2.5', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.
Moist	6,462	0.5	N	PH07	1'	1		
Moist	2,402	0.4	N			2		
Moist	3,180	0.3	N	PH07A	3	3	SP-S	2.5'-3', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.
Total Depth @ 3' bgs, auger refusal.								

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH08		Date: 01/23/2023				
		Site Name: Golden Child SWD						
		Incident Number: nAPP2232250506						
		Job Number: 03C1558156						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.152945,-104.016841				Hole Diameter: 3.5"				
				Total Depth: 2' bgs				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	3,180	1.2	N	SS08	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.
Moist	4,267	0.6	N			1	SP	0.5'-1.5', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.
Moist	4,267	0.4	N	PH08	2'	2	SP-S	1.5'-2', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.
Total Depth @ 2' bgs, auger refusal.								

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH09		Date: 01/20/2023				
		Site Name: Golden Child SWD						
		Incident Number: nAPP2232250506						
		Job Number: 03C1558156						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.152784,-104.017273				Hole Diameter: N/A				
				Method: Trackhoe				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	1,960	1.3	N	SS09	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.
Moist	1,831	0.8	N	PH09	3	1	SP	0.5'-4', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.
Moist	2,245	0.6	N			2	CCHE	4'-7', CALICHE, dry, tan-light brown, moderately-well consolidated, no stain, no odor.
Moist	2,402	0.7	N			4		
Dry	1,478	0.4	N			6		
Dry	1,478	0.7	N	PH09A	6	6	SP-S	7'-16', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.
Dry	1,337	0.6	N	PH09B	8			
Dry	2,576	0.7	N		10			
Dry	2,402	0.6	N		12			
Dry	2,402	0.3	N		14			
Dry	1,831	0.2	N	PH09C	16	16		
Total Depth @ 16' bgs.								

 ENSOLUM Environmental, Engineering and Hydrogeologic Consultants		Sample Name: PH10		Date: 01/20/2023				
		Site Name: Golden Child SWD						
		Incident Number: nAPP2232250506						
		Job Number: 03C1558156						
LITHOLOGIC / SOIL SAMPLING LOG								
Coordinates: 32.152728,-104.017083				Logged By: Connor Whitman				
				Method: Trackhoe				
				Hole Diameter: N/A				
				Total Depth: 10' bgs				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	1,276	1.3	N	SS10	0.5	0	CCHE (fill)	0-0.5', CALICHE, dry, light brown-off white, unconsolidated fill, no stain, no odor, fill.
						1	SP	0.5'-5', SAND, moist, brown, poorly graded, fine grained, trace roots, no stain, no odor.
Moist	459	0.4	N	PH10	2	2		
						3		
Moist	845	0.4	N			4		
Dry	1,002	0.6	N	PH10A	6	6	CCHE	5'-7', CALICHE, dry, tan-light brown, moderately-well consolidated, no stain, no odor.
Dry	1,002	0.4	N			8		
Dry	1,181	0.6	N	PH10B	10	10	SP-S	7'-10', SANDSTONE, dry, light brown, poorly graded, very fine-fine grained, moderately-well consolidated, no stain, no odor.
Total Depth @ 10' bgs.								



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 2/2/2023 2:54:13 PM Revision 1

JOB DESCRIPTION

Golden Child SWD
SDG NUMBER 03C1558156

JOB NUMBER

890-3829-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

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

Generated
2/2/2023 2:54:13 PM
Revision 1

Client: Ensolum
Project/Site: Golden Child SWD

Laboratory Job ID: 890-3829-1
SDG: 03C1558156

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Definitions/Glossary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

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Case Narrative

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Job ID: 890-3829-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3829-1

REVISION

The report being provided is a revision of the original report sent on 1/17/2023. The report (revision 1) is being revised due to Per client email, requesting TPH re run on SS06.

Report revision history

Receipt

The samples were received on 1/11/2023 3:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-3829-1), SS02 (890-3829-2), SS03 (890-3829-3), SS04 (890-3829-4), SS05 (890-3829-5), SS06 (890-3829-6), SS07 (890-3829-7), SS08 (890-3829-8), SS09 (890-3829-9), SS10 (890-3829-10), SS11 (890-3829-11) and SS12 (890-3829-12).

GC VOA

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-3829-1), SS03 (890-3829-3), SS11 (890-3829-11), SS12 (890-3829-12), (LCSD 880-43908/3-A), (MB 880-43908/1-A) and (890-3793-A-1-C). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (880-24218-A-1-C MS). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-43973 and analytical batch 880-44146 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS01

Lab Sample ID: 890-3829-1

Date Collected: 01/10/23 12:35

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/16/23 22:47	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/16/23 22:47	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/16/23 22:47	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		01/13/23 13:36	01/16/23 22:47	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/16/23 22:47	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		01/13/23 13:36	01/16/23 22:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	01/13/23 13:36	01/16/23 22:47	1
1,4-Difluorobenzene (Surr)	103		70 - 130	01/13/23 13:36	01/16/23 22:47	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			01/17/23 14:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	81.0		49.8	mg/Kg			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		01/13/23 13:08	01/15/23 12:56	1
Diesel Range Organics (Over C10-C28)	81.0		49.8	mg/Kg		01/13/23 13:08	01/15/23 12:56	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		01/13/23 13:08	01/15/23 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	64	S1-	70 - 130	01/13/23 13:08	01/15/23 12:56	1
o-Terphenyl	66	S1-	70 - 130	01/13/23 13:08	01/15/23 12:56	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3360		25.3	mg/Kg			01/16/23 23:48	5

Client Sample ID: SS02

Lab Sample ID: 890-3829-2

Date Collected: 01/10/23 12:40

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 23:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 23:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 23:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		01/13/23 13:36	01/16/23 23:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 23:07	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		01/13/23 13:36	01/16/23 23:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	01/13/23 13:36	01/16/23 23:07	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS02

Lab Sample ID: 890-3829-2

Date Collected: 01/10/23 12:40

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102		70 - 130	01/13/23 13:36	01/16/23 23:07	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			01/17/23 14:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	64.5		49.9	mg/Kg			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 13:18	1
Diesel Range Organics (Over C10-C28)	64.5		49.9	mg/Kg		01/13/23 13:08	01/15/23 13:18	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 13:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130			01/13/23 13:08	01/15/23 13:18	1
o-Terphenyl	90		70 - 130			01/13/23 13:08	01/15/23 13:18	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6770		49.7	mg/Kg			01/17/23 00:06	10

Client Sample ID: SS03

Lab Sample ID: 890-3829-3

Date Collected: 01/10/23 12:45

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 00:57	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 00:57	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 00:57	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/13/23 13:36	01/17/23 00:57	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 00:57	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		01/13/23 13:36	01/17/23 00:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130	01/13/23 13:36	01/17/23 00:57	1
1,4-Difluorobenzene (Surr)	102		70 - 130	01/13/23 13:36	01/17/23 00:57	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			01/17/23 14:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	64.5		50.0	mg/Kg			01/16/23 16:51	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS03

Lab Sample ID: 890-3829-3

Date Collected: 01/10/23 12:45

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 13:40	1
Diesel Range Organics (Over C10-C28)	64.5		50.0	mg/Kg		01/13/23 13:08	01/15/23 13:40	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 13:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130			01/13/23 13:08	01/15/23 13:40	1
o-Terphenyl	136	S1+	70 - 130			01/13/23 13:08	01/15/23 13:40	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2670		25.0	mg/Kg			01/17/23 00:13	5

Client Sample ID: SS04

Lab Sample ID: 890-3829-4

Date Collected: 01/10/23 13:05

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 01:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 01:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 01:18	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		01/13/23 13:36	01/17/23 01:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 01:18	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		01/13/23 13:36	01/17/23 01:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130			01/13/23 13:36	01/17/23 01:18	1
1,4-Difluorobenzene (Surr)	102		70 - 130			01/13/23 13:36	01/17/23 01:18	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			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 14:02	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 14:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 14:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			01/13/23 13:08	01/15/23 14:02	1
o-Terphenyl	114		70 - 130			01/13/23 13:08	01/15/23 14:02	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS04

Lab Sample ID: 890-3829-4

Date Collected: 01/10/23 13:05

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1620		24.9	mg/Kg			01/17/23 00:19	5

Client Sample ID: SS05

Lab Sample ID: 890-3829-5

Date Collected: 01/10/23 13:10

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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		01/13/23 13:36	01/17/23 01:38	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 01:38	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 01:38	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/13/23 13:36	01/17/23 01:38	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 01:38	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/13/23 13:36	01/17/23 01:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			01/13/23 13:36	01/17/23 01:38	1
1,4-Difluorobenzene (Surr)	101		70 - 130			01/13/23 13:36	01/17/23 01:38	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			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 14:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 14:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 14:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	117		70 - 130			01/13/23 13:08	01/15/23 14:23	1
o-Terphenyl	127		70 - 130			01/13/23 13:08	01/15/23 14:23	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	239		4.96	mg/Kg			01/17/23 00:25	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS06

Lab Sample ID: 890-3829-6

Date Collected: 01/10/23 14:00

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/17/23 01:59	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/17/23 01:59	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/17/23 01:59	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		01/13/23 13:36	01/17/23 01:59	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/13/23 13:36	01/17/23 01:59	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		01/13/23 13:36	01/17/23 01:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130	01/13/23 13:36	01/17/23 01:59	1
1,4-Difluorobenzene (Surr)	101		70 - 130	01/13/23 13:36	01/17/23 01:59	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			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/24/23 01:00	02/02/23 00:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/24/23 01:00	02/02/23 00:09	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/24/23 01:00	02/02/23 00:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	01/24/23 01:00	02/02/23 00:09	1
o-Terphenyl	109		70 - 130	01/24/23 01:00	02/02/23 00:09	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	55.1		4.95	mg/Kg			01/17/23 00:44	1

Client Sample ID: SS07

Lab Sample ID: 890-3829-7

Date Collected: 01/10/23 14:05

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		01/13/23 13:36	01/17/23 02:19	1
Toluene	<0.00202	U	0.00202	mg/Kg		01/13/23 13:36	01/17/23 02:19	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		01/13/23 13:36	01/17/23 02:19	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		01/13/23 13:36	01/17/23 02:19	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		01/13/23 13:36	01/17/23 02:19	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		01/13/23 13:36	01/17/23 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	01/13/23 13:36	01/17/23 02:19	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS07

Lab Sample ID: 890-3829-7

Date Collected: 01/10/23 14:05

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	104		70 - 130	01/13/23 13:36	01/17/23 02:19	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 15:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 15:08	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 15:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130			01/13/23 13:08	01/15/23 15:08	1
o-Terphenyl	101		70 - 130			01/13/23 13:08	01/15/23 15:08	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	368		5.01	mg/Kg			01/17/23 00:50	1

Client Sample ID: SS08

Lab Sample ID: 890-3829-8

Date Collected: 01/10/23 14:10

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 02:39	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 02:39	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 02:39	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		01/13/23 13:36	01/17/23 02:39	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/17/23 02:39	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		01/13/23 13:36	01/17/23 02:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130	01/13/23 13:36	01/17/23 02:39	1
1,4-Difluorobenzene (Surr)	93		70 - 130	01/13/23 13:36	01/17/23 02:39	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			01/17/23 14:44	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			01/16/23 16:51	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS08

Lab Sample ID: 890-3829-8

Date Collected: 01/10/23 14:10

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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	49.9	mg/Kg		01/13/23 13:08	01/15/23 15:52	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 15:52	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 15:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	106		70 - 130			01/13/23 13:08	01/15/23 15:52	1
o-Terphenyl	125		70 - 130			01/13/23 13:08	01/15/23 15:52	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2610		25.2	mg/Kg			01/17/23 00:56	5

Client Sample ID: SS09

Lab Sample ID: 890-3829-9

Date Collected: 01/10/23 14:50

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 03:00	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 03:00	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 03:00	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/13/23 13:36	01/17/23 03:00	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 03:00	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		01/13/23 13:36	01/17/23 03:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130			01/13/23 13:36	01/17/23 03:00	1
1,4-Difluorobenzene (Surr)	102		70 - 130			01/13/23 13:36	01/17/23 03:00	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			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 16:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 16:13	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 16:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			01/13/23 13:08	01/15/23 16:13	1
o-Terphenyl	113		70 - 130			01/13/23 13:08	01/15/23 16:13	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS09

Lab Sample ID: 890-3829-9

Date Collected: 01/10/23 14:50

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2080		25.0	mg/Kg			01/17/23 01:02	5

Client Sample ID: SS10

Lab Sample ID: 890-3829-10

Date Collected: 01/10/23 14:55

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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		01/13/23 13:36	01/17/23 03:20	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 03:20	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 03:20	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/13/23 13:36	01/17/23 03:20	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 03:20	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/13/23 13:36	01/17/23 03:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130			01/13/23 13:36	01/17/23 03:20	1
1,4-Difluorobenzene (Surr)	102		70 - 130			01/13/23 13:36	01/17/23 03:20	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			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 16:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 16:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 16:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			01/13/23 13:08	01/15/23 16:36	1
o-Terphenyl	93		70 - 130			01/13/23 13:08	01/15/23 16:36	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1160		5.03	mg/Kg			01/17/23 01:08	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS11

Lab Sample ID: 890-3829-11

Date Collected: 01/10/23 15:00

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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		01/13/23 13:36	01/17/23 03:41	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 03:41	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 03:41	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/13/23 13:36	01/17/23 03:41	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/13/23 13:36	01/17/23 03:41	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/13/23 13:36	01/17/23 03:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	01/13/23 13:36	01/17/23 03:41	1
1,4-Difluorobenzene (Surr)	103		70 - 130	01/13/23 13:36	01/17/23 03:41	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			01/17/23 14:44	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			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 16:57	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 16:57	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 16:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	127		70 - 130	01/13/23 13:08	01/15/23 16:57	1
o-Terphenyl	136	S1+	70 - 130	01/13/23 13:08	01/15/23 16:57	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1150		5.04	mg/Kg			01/17/23 01:14	1

Client Sample ID: SS12

Lab Sample ID: 890-3829-12

Date Collected: 01/10/23 15:05

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 04:01	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 04:01	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 04:01	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/13/23 13:36	01/17/23 04:01	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/13/23 13:36	01/17/23 04:01	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		01/13/23 13:36	01/17/23 04:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127		70 - 130	01/13/23 13:36	01/17/23 04:01	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS12

Lab Sample ID: 890-3829-12

Date Collected: 01/10/23 15:05

Matrix: Solid

Date Received: 01/11/23 15:00

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	106		70 - 130	01/13/23 13:36	01/17/23 04:01	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			01/17/23 14:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	110		49.9	mg/Kg			01/16/23 16:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 17:18	1
Diesel Range Organics (Over C10-C28)	110		49.9	mg/Kg		01/13/23 13:08	01/15/23 17:18	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/13/23 13:08	01/15/23 17:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130			01/13/23 13:08	01/15/23 17:18	1
o-Terphenyl	135	S1+	70 - 130			01/13/23 13:08	01/15/23 17:18	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1880		25.0	mg/Kg			01/17/23 01:33	5

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Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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)
890-3808-A-1-D MS	Matrix Spike	111	102
890-3808-A-1-E MSD	Matrix Spike Duplicate	112	103
890-3829-1	SS01	124	103
890-3829-2	SS02	120	102
890-3829-3	SS03	116	102
890-3829-4	SS04	123	102
890-3829-5	SS05	117	101
890-3829-6	SS06	118	101
890-3829-7	SS07	124	104
890-3829-8	SS08	125	93
890-3829-9	SS09	122	102
890-3829-10	SS10	121	102
890-3829-11	SS11	124	103
890-3829-12	SS12	127	106
LCS 880-43748/1-A	Lab Control Sample	111	100
LCSD 880-43748/2-A	Lab Control Sample Dup	112	105
MB 880-43748/5-A	Method Blank	112	100
MB 880-43960/8	Method Blank	110	99
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-24218-A-1-C MS	Matrix Spike	132 S1+	108
880-24218-A-1-D MSD	Matrix Spike Duplicate	100	99
890-3793-A-1-D MS	Matrix Spike	92	100
890-3793-A-1-E MSD	Matrix Spike Duplicate	96	107
890-3829-1	SS01	64 S1-	66 S1-
890-3829-2	SS02	82	90
890-3829-3	SS03	116	136 S1+
890-3829-4	SS04	97	114
890-3829-5	SS05	117	127
890-3829-6	SS06	113	109
890-3829-7	SS07	93	101
890-3829-8	SS08	106	125
890-3829-9	SS09	96	113
890-3829-10	SS10	90	93
890-3829-11	SS11	127	136 S1+
890-3829-12	SS12	110	135 S1+
LCS 880-43908/2-A	Lab Control Sample	111	127
LCS 880-45137/2-A	Lab Control Sample	95	102
LCSD 880-43908/3-A	Lab Control Sample Dup	110	132 S1+
LCSD 880-45137/3-A	Lab Control Sample Dup	97	104
MB 880-43908/1-A	Method Blank	167 S1+	203 S1+

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Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
MB 880-45137/1-A	Method Blank	113	122
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-43748/5-A

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43748

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 19:34	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 19:34	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 19:34	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/13/23 13:36	01/16/23 19:34	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/13/23 13:36	01/16/23 19:34	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/13/23 13:36	01/16/23 19:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	01/13/23 13:36	01/16/23 19:34	1
1,4-Difluorobenzene (Surr)	100		70 - 130	01/13/23 13:36	01/16/23 19:34	1

Lab Sample ID: LCS 880-43748/1-A

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 43748

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1121		mg/Kg		112	70 - 130
Toluene	0.100	0.1077		mg/Kg		108	70 - 130
Ethylbenzene	0.100	0.1052		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2165		mg/Kg		108	70 - 130
o-Xylene	0.100	0.1024		mg/Kg		102	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-43748/2-A

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 43748

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1159		mg/Kg		116	70 - 130	3	35
Toluene	0.100	0.1086		mg/Kg		109	70 - 130	1	35
Ethylbenzene	0.100	0.1066		mg/Kg		107	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2192		mg/Kg		110	70 - 130	1	35
o-Xylene	0.100	0.1045		mg/Kg		105	70 - 130	2	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 890-3808-A-1-D MS

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 43748

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.101	0.09870		mg/Kg		98	70 - 130
Toluene	<0.00200	U	0.101	0.09623		mg/Kg		95	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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

Lab Sample ID: 890-3808-A-1-D MS

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 43748

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.101	0.09472		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.202	0.1946		mg/Kg		96	70 - 130
o-Xylene	<0.00200	U	0.101	0.09494		mg/Kg		94	70 - 130

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

Lab Sample ID: 890-3808-A-1-E MSD

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 43748

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	<0.00200	U	0.0996	0.1006		mg/Kg		101	70 - 130	2	35
Toluene	<0.00200	U	0.0996	0.09733		mg/Kg		98	70 - 130	1	35
Ethylbenzene	<0.00200	U	0.0996	0.09546		mg/Kg		96	70 - 130	1	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1956		mg/Kg		98	70 - 130	1	35
o-Xylene	<0.00200	U	0.0996	0.09472		mg/Kg		95	70 - 130	0	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: MB 880-43960/8

Matrix: Solid

Analysis Batch: 43960

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			01/16/23 12:24	1
Toluene	<0.00200	U	0.00200	mg/Kg			01/16/23 12:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			01/16/23 12:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			01/16/23 12:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			01/16/23 12:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			01/16/23 12:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130		01/16/23 12:24	1
1,4-Difluorobenzene (Surr)	99		70 - 130		01/16/23 12:24	1

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

Lab Sample ID: MB 880-43908/1-A

Matrix: Solid

Analysis Batch: 43947

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43908

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		01/13/23 13:08	01/15/23 08:29	1

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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

Lab Sample ID: MB 880-43908/1-A

Matrix: Solid

Analysis Batch: 43947

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43908

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		01/13/23 13:08	01/15/23 08:29	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/13/23 13:08	01/15/23 08:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	167	S1+	70 - 130			01/13/23 13:08	01/15/23 08:29	1
o-Terphenyl	203	S1+	70 - 130			01/13/23 13:08	01/15/23 08:29	1

Lab Sample ID: LCS 880-43908/2-A

Matrix: Solid

Analysis Batch: 43947

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 43908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1045		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	1000	972.8		mg/Kg		97	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	111		70 - 130				
o-Terphenyl	127		70 - 130				

Lab Sample ID: LCSD 880-43908/3-A

Matrix: Solid

Analysis Batch: 43947

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 43908

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1027		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	981.4		mg/Kg		98	70 - 130	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	110		70 - 130						
o-Terphenyl	132	S1+	70 - 130						

Lab Sample ID: 890-3793-A-1-D MS

Matrix: Solid

Analysis Batch: 43947

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 43908

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	998	872.4		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	998	1034		mg/Kg		102	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	92		70 - 130						
o-Terphenyl	100		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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

Lab Sample ID: 890-3793-A-1-E MSD

Matrix: Solid

Analysis Batch: 43947

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 43908

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	997	901.5		mg/Kg		88	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	997	1119		mg/Kg		111	70 - 130	8	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	96		70 - 130								
o-Terphenyl	107		70 - 130								

Lab Sample ID: MB 880-45137/1-A

Matrix: Solid

Analysis Batch: 45168

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45137

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		01/31/23 14:00	02/01/23 19:48	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/31/23 14:00	02/01/23 19:48	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/31/23 14:00	02/01/23 19:48	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130			01/31/23 14:00	02/01/23 19:48	1
o-Terphenyl	122		70 - 130			01/31/23 14:00	02/01/23 19:48	1

Lab Sample ID: LCS 880-45137/2-A

Matrix: Solid

Analysis Batch: 45168

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	999	897.4		mg/Kg		90	70 - 130		
Diesel Range Organics (Over C10-C28)	999	924.5		mg/Kg		93	70 - 130		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
1-Chlorooctane	95		70 - 130						
o-Terphenyl	102		70 - 130						

Lab Sample ID: LCSD 880-45137/3-A

Matrix: Solid

Analysis Batch: 45168

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45137

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	999	879.1		mg/Kg		88	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	999	925.2		mg/Kg		93	70 - 130	0	20

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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

Lab Sample ID: LCSD 880-45137/3-A

Matrix: Solid

Analysis Batch: 45168

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45137

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	104		70 - 130

Lab Sample ID: 880-24218-A-1-C MS

Matrix: Solid

Analysis Batch: 45168

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45137

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1016		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1028		mg/Kg		101	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	132	S1+	70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: 880-24218-A-1-D MSD

Matrix: Solid

Analysis Batch: 45168

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45137

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	915.8		mg/Kg		88	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	923.5		mg/Kg		91	70 - 130	11	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	100		70 - 130
o-Terphenyl	99		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43973/1-A

Matrix: Solid

Analysis Batch: 44146

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			01/16/23 23:30	1

Lab Sample ID: LCS 880-43973/2-A

Matrix: Solid

Analysis Batch: 44146

Client Sample ID: Lab Control Sample

Prep Type: Soluble

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

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-43973/3-A

Matrix: Solid

Analysis Batch: 44146

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	262.8		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-3829-1 MS

Matrix: Solid

Analysis Batch: 44146

Client Sample ID: SS01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	3360		1260	4628		mg/Kg		101	90 - 110		

Lab Sample ID: 890-3829-1 MSD

Matrix: Solid

Analysis Batch: 44146

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	3360		1260	4627		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 890-3829-11 MS

Matrix: Solid

Analysis Batch: 44146

Client Sample ID: SS11

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1150		252	1362	4	mg/Kg		86	90 - 110		

Lab Sample ID: 890-3829-11 MSD

Matrix: Solid

Analysis Batch: 44146

Client Sample ID: SS11

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1150		252	1377	4	mg/Kg		92	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

GC VOA

Prep Batch: 43748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Total/NA	Solid	5035	
890-3829-2	SS02	Total/NA	Solid	5035	
890-3829-3	SS03	Total/NA	Solid	5035	
890-3829-4	SS04	Total/NA	Solid	5035	
890-3829-5	SS05	Total/NA	Solid	5035	
890-3829-6	SS06	Total/NA	Solid	5035	
890-3829-7	SS07	Total/NA	Solid	5035	
890-3829-8	SS08	Total/NA	Solid	5035	
890-3829-9	SS09	Total/NA	Solid	5035	
890-3829-10	SS10	Total/NA	Solid	5035	
890-3829-11	SS11	Total/NA	Solid	5035	
890-3829-12	SS12	Total/NA	Solid	5035	
MB 880-43748/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43748/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43748/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3808-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-3808-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 43960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Total/NA	Solid	8021B	43748
890-3829-2	SS02	Total/NA	Solid	8021B	43748
890-3829-3	SS03	Total/NA	Solid	8021B	43748
890-3829-4	SS04	Total/NA	Solid	8021B	43748
890-3829-5	SS05	Total/NA	Solid	8021B	43748
890-3829-6	SS06	Total/NA	Solid	8021B	43748
890-3829-7	SS07	Total/NA	Solid	8021B	43748
890-3829-8	SS08	Total/NA	Solid	8021B	43748
890-3829-9	SS09	Total/NA	Solid	8021B	43748
890-3829-10	SS10	Total/NA	Solid	8021B	43748
890-3829-11	SS11	Total/NA	Solid	8021B	43748
890-3829-12	SS12	Total/NA	Solid	8021B	43748
MB 880-43748/5-A	Method Blank	Total/NA	Solid	8021B	43748
MB 880-43960/8	Method Blank	Total/NA	Solid	8021B	
LCS 880-43748/1-A	Lab Control Sample	Total/NA	Solid	8021B	43748
LCSD 880-43748/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43748
890-3808-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	43748
890-3808-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	43748

Analysis Batch: 44185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Total/NA	Solid	Total BTEX	
890-3829-2	SS02	Total/NA	Solid	Total BTEX	
890-3829-3	SS03	Total/NA	Solid	Total BTEX	
890-3829-4	SS04	Total/NA	Solid	Total BTEX	
890-3829-5	SS05	Total/NA	Solid	Total BTEX	
890-3829-6	SS06	Total/NA	Solid	Total BTEX	
890-3829-7	SS07	Total/NA	Solid	Total BTEX	
890-3829-8	SS08	Total/NA	Solid	Total BTEX	
890-3829-9	SS09	Total/NA	Solid	Total BTEX	
890-3829-10	SS10	Total/NA	Solid	Total BTEX	

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

GC VOA (Continued)

Analysis Batch: 44185 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-11	SS11	Total/NA	Solid	Total BTEX	
890-3829-12	SS12	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 43908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Total/NA	Solid	8015NM Prep	
890-3829-2	SS02	Total/NA	Solid	8015NM Prep	
890-3829-3	SS03	Total/NA	Solid	8015NM Prep	
890-3829-4	SS04	Total/NA	Solid	8015NM Prep	
890-3829-5	SS05	Total/NA	Solid	8015NM Prep	
890-3829-7	SS07	Total/NA	Solid	8015NM Prep	
890-3829-8	SS08	Total/NA	Solid	8015NM Prep	
890-3829-9	SS09	Total/NA	Solid	8015NM Prep	
890-3829-10	SS10	Total/NA	Solid	8015NM Prep	
890-3829-11	SS11	Total/NA	Solid	8015NM Prep	
890-3829-12	SS12	Total/NA	Solid	8015NM Prep	
MB 880-43908/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43908/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43908/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3793-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3793-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 43947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Total/NA	Solid	8015B NM	43908
890-3829-2	SS02	Total/NA	Solid	8015B NM	43908
890-3829-3	SS03	Total/NA	Solid	8015B NM	43908
890-3829-4	SS04	Total/NA	Solid	8015B NM	43908
890-3829-5	SS05	Total/NA	Solid	8015B NM	43908
890-3829-7	SS07	Total/NA	Solid	8015B NM	43908
890-3829-8	SS08	Total/NA	Solid	8015B NM	43908
890-3829-9	SS09	Total/NA	Solid	8015B NM	43908
890-3829-10	SS10	Total/NA	Solid	8015B NM	43908
890-3829-11	SS11	Total/NA	Solid	8015B NM	43908
890-3829-12	SS12	Total/NA	Solid	8015B NM	43908
MB 880-43908/1-A	Method Blank	Total/NA	Solid	8015B NM	43908
LCS 880-43908/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43908
LCSD 880-43908/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43908
890-3793-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43908
890-3793-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43908

Analysis Batch: 44061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Total/NA	Solid	8015 NM	
890-3829-2	SS02	Total/NA	Solid	8015 NM	
890-3829-3	SS03	Total/NA	Solid	8015 NM	
890-3829-4	SS04	Total/NA	Solid	8015 NM	
890-3829-5	SS05	Total/NA	Solid	8015 NM	
890-3829-6	SS06	Total/NA	Solid	8015 NM	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

GC Semi VOA (Continued)

Analysis Batch: 44061 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-7	SS07	Total/NA	Solid	8015 NM	
890-3829-8	SS08	Total/NA	Solid	8015 NM	
890-3829-9	SS09	Total/NA	Solid	8015 NM	
890-3829-10	SS10	Total/NA	Solid	8015 NM	
890-3829-11	SS11	Total/NA	Solid	8015 NM	
890-3829-12	SS12	Total/NA	Solid	8015 NM	

Prep Batch: 45137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-6	SS06	Total/NA	Solid	8015NM Prep	
MB 880-45137/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45137/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45137/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24218-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-24218-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 45168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-6	SS06	Total/NA	Solid	8015B NM	45137
MB 880-45137/1-A	Method Blank	Total/NA	Solid	8015B NM	45137
LCS 880-45137/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45137
LCSD 880-45137/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45137
880-24218-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	45137
880-24218-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45137

HPLC/IC

Leach Batch: 43973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Soluble	Solid	DI Leach	
890-3829-2	SS02	Soluble	Solid	DI Leach	
890-3829-3	SS03	Soluble	Solid	DI Leach	
890-3829-4	SS04	Soluble	Solid	DI Leach	
890-3829-5	SS05	Soluble	Solid	DI Leach	
890-3829-6	SS06	Soluble	Solid	DI Leach	
890-3829-7	SS07	Soluble	Solid	DI Leach	
890-3829-8	SS08	Soluble	Solid	DI Leach	
890-3829-9	SS09	Soluble	Solid	DI Leach	
890-3829-10	SS10	Soluble	Solid	DI Leach	
890-3829-11	SS11	Soluble	Solid	DI Leach	
890-3829-12	SS12	Soluble	Solid	DI Leach	
MB 880-43973/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43973/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43973/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3829-1 MS	SS01	Soluble	Solid	DI Leach	
890-3829-1 MSD	SS01	Soluble	Solid	DI Leach	
890-3829-11 MS	SS11	Soluble	Solid	DI Leach	
890-3829-11 MSD	SS11	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

HPLC/IC

Analysis Batch: 44146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3829-1	SS01	Soluble	Solid	300.0	43973
890-3829-2	SS02	Soluble	Solid	300.0	43973
890-3829-3	SS03	Soluble	Solid	300.0	43973
890-3829-4	SS04	Soluble	Solid	300.0	43973
890-3829-5	SS05	Soluble	Solid	300.0	43973
890-3829-6	SS06	Soluble	Solid	300.0	43973
890-3829-7	SS07	Soluble	Solid	300.0	43973
890-3829-8	SS08	Soluble	Solid	300.0	43973
890-3829-9	SS09	Soluble	Solid	300.0	43973
890-3829-10	SS10	Soluble	Solid	300.0	43973
890-3829-11	SS11	Soluble	Solid	300.0	43973
890-3829-12	SS12	Soluble	Solid	300.0	43973
MB 880-43973/1-A	Method Blank	Soluble	Solid	300.0	43973
LCS 880-43973/2-A	Lab Control Sample	Soluble	Solid	300.0	43973
LCSD 880-43973/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43973
890-3829-1 MS	SS01	Soluble	Solid	300.0	43973
890-3829-1 MSD	SS01	Soluble	Solid	300.0	43973
890-3829-11 MS	SS11	Soluble	Solid	300.0	43973
890-3829-11 MSD	SS11	Soluble	Solid	300.0	43973

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Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS01

Lab Sample ID: 890-3829-1

Date Collected: 01/10/23 12:35

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/16/23 22:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 12:56	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		5			44146	01/16/23 23:48	CH	EET MID

Client Sample ID: SS02

Lab Sample ID: 890-3829-2

Date Collected: 01/10/23 12:40

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/16/23 23:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 13:18	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		10			44146	01/17/23 00:06	CH	EET MID

Client Sample ID: SS03

Lab Sample ID: 890-3829-3

Date Collected: 01/10/23 12:45

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 00:57	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 13:40	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		5			44146	01/17/23 00:13	CH	EET MID

Client Sample ID: SS04

Lab Sample ID: 890-3829-4

Date Collected: 01/10/23 13:05

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 01:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS04

Lab Sample ID: 890-3829-4

Date Collected: 01/10/23 13:05

Matrix: Solid

Date Received: 01/11/23 15:00

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			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 14:02	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		5			44146	01/17/23 00:19	CH	EET MID

Client Sample ID: SS05

Lab Sample ID: 890-3829-5

Date Collected: 01/10/23 13:10

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 01:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 14:23	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		1			44146	01/17/23 00:25	CH	EET MID

Client Sample ID: SS06

Lab Sample ID: 890-3829-6

Date Collected: 01/10/23 14:00

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 01:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45137	01/24/23 01:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45168	02/02/23 00:09	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		1			44146	01/17/23 00:44	CH	EET MID

Client Sample ID: SS07

Lab Sample ID: 890-3829-7

Date Collected: 01/10/23 14:05

Matrix: Solid

Date Received: 01/11/23 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 02:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 15:08	AJ	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS07

Date Collected: 01/10/23 14:05

Date Received: 01/11/23 15:00

Lab Sample ID: 890-3829-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		1			44146	01/17/23 00:50	CH	EET MID

Client Sample ID: SS08

Date Collected: 01/10/23 14:10

Date Received: 01/11/23 15:00

Lab Sample ID: 890-3829-8

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 02:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 15:52	AJ	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		5			44146	01/17/23 00:56	CH	EET MID

Client Sample ID: SS09

Date Collected: 01/10/23 14:50

Date Received: 01/11/23 15:00

Lab Sample ID: 890-3829-9

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 03:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 16:13	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		5			44146	01/17/23 01:02	CH	EET MID

Client Sample ID: SS10

Date Collected: 01/10/23 14:55

Date Received: 01/11/23 15:00

Lab Sample ID: 890-3829-10

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 03:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 16:36	AJ	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		1			44146	01/17/23 01:08	CH	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Client Sample ID: SS11

Lab Sample ID: 890-3829-11

Date Collected: 01/10/23 15:00

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 03:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 16:57	AJ	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		1			44146	01/17/23 01:14	CH	EET MID

Client Sample ID: SS12

Lab Sample ID: 890-3829-12

Date Collected: 01/10/23 15:05

Matrix: Solid

Date Received: 01/11/23 15:00

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	43748	01/13/23 13:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43960	01/17/23 04:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44185	01/17/23 14:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			44061	01/16/23 16:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43908	01/13/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43947	01/15/23 17:18	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	43973	01/16/23 09:24	KS	EET MID
Soluble	Analysis	300.0		5			44146	01/17/23 01:33	CH	EET MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Eurofins Carlsbad

Sample Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3829-1
SDG: 03C1558156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3829-1	SS01	Solid	01/10/23 12:35	01/11/23 15:00	0.5'
890-3829-2	SS02	Solid	01/10/23 12:40	01/11/23 15:00	0.5'
890-3829-3	SS03	Solid	01/10/23 12:45	01/11/23 15:00	0.5'
890-3829-4	SS04	Solid	01/10/23 13:05	01/11/23 15:00	0.5'
890-3829-5	SS05	Solid	01/10/23 13:10	01/11/23 15:00	0.5'
890-3829-6	SS06	Solid	01/10/23 14:00	01/11/23 15:00	0.5'
890-3829-7	SS07	Solid	01/10/23 14:05	01/11/23 15:00	0.5'
890-3829-8	SS08	Solid	01/10/23 14:10	01/11/23 15:00	0.5'
890-3829-9	SS09	Solid	01/10/23 14:50	01/11/23 15:00	0.5'
890-3829-10	SS10	Solid	01/10/23 14:55	01/11/23 15:00	0.5'
890-3829-11	SS11	Solid	01/10/23 15:00	01/11/23 15:00	0.5'
890-3829-12	SS12	Solid	01/10/23 15:05	01/11/23 15:00	0.5'



Environment Testing
Xenco

Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 2

Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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:	Golden Child SWD	Turn Around	☒ Routine ☐ Rush	Pres. Code	
Project Number:	03C1558156	Due Date:			
Project Location:	Connor Whitman	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:					
PO #:					
SAMPLE RECEIPT					
Samples Received In tact:	Yes ☒ No ☐	Temp Blank:	Gas ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Cooler Custody Seals:	Yes ☒ No ☐	Thermometer ID:			
Sample Custody Seals:	Yes ☒ No ☐	Correction Factor:			
Total Containers:		Temperature Reading:			
		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	ANALYSIS REQUEST	Preservative Codes	Sample Comments
SS01	S	1/10/23	12:35	.5'	G	1					None: NO Cool: Cool HCL: HC H ₂ SO ₄ : H ₂ H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NASO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC	Incident ID: nAPP2232250506 Cost Center: 1081711001
SS02			12:40	.5'		1						
SS03			12:45	.5'		1						
SS04			1:05	.5'		1						
SS05			1:10	.5'		1						
SS06			2:00	.5'		1						
SS07			2:05	.5'		1						
SS08			2:10	.5'		1						
SS09			2:50	.5'		1						
SS10			2:55	.5'		1						

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Ti	Sn	U	V	Zn			
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010: 8RCRA		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U													
		Hg: 1631 / 245.1 / 7470 / 7471																																

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$3 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 <i>Cuth</i>	<i>Amelia Stutz</i>	1-11-23 1500			
3		4			
5		6			



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) 565-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

Work Order No:

www.xenco.com Page 2 of 2

Project Manager:	Ben Beill	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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

[illegible]

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3829-1

SDG Number: 03C1558156

Login Number: 3829

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: 890-3829-1

SDG Number: 03C1558156

Login Number: 3829

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/13/23 10:36 AM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 2/3/2023 4:49:33 PM

JOB DESCRIPTION

Golden Child SWD
SDG NUMBER 03C1558156

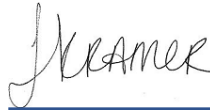
JOB NUMBER

890-3920-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/3/2023 4:49:33 PM

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

Client: Ensolum
Project/Site: Golden Child SWD

Laboratory Job ID: 890-3920-1
SDG: 03C1558156

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Definitions/Glossary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Job ID: 890-3920-1

Laboratory: Eurofins Carlsbad

Narrative	
	Job Narrative 890-3920-1

Receipt

The samples were received on 1/23/2023 4:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3920-1), PH01A (890-3920-2), PH01B (890-3920-3) and PH01C (890-3920-4).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-45146 and analytical batch 880-45131 was outside the control limits.

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.

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Client Sample ID: PH01

Lab Sample ID: 890-3920-1

Date Collected: 01/19/23 10:40

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		01/31/23 14:43	02/01/23 04:13	1
Toluene	<0.00202	U	0.00202	mg/Kg		01/31/23 14:43	02/01/23 04:13	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		01/31/23 14:43	02/01/23 04:13	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		01/31/23 14:43	02/01/23 04:13	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		01/31/23 14:43	02/01/23 04:13	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		01/31/23 14:43	02/01/23 04:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	01/31/23 14:43	02/01/23 04:13	1
1,4-Difluorobenzene (Surr)	96		70 - 130	01/31/23 14:43	02/01/23 04:13	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			02/01/23 12:31	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			02/03/23 17:32	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		02/01/23 15:22	02/03/23 15:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/01/23 15:22	02/03/23 15:30	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/01/23 15:22	02/03/23 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	76		70 - 130	02/01/23 15:22	02/03/23 15:30	1
o-Terphenyl	76		70 - 130	02/01/23 15:22	02/03/23 15:30	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1640		25.0	mg/Kg			01/27/23 21:49	5

Client Sample ID: PH01A

Lab Sample ID: 890-3920-2

Date Collected: 01/19/23 10:55

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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		01/31/23 14:43	02/01/23 04:33	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/31/23 14:43	02/01/23 04:33	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/31/23 14:43	02/01/23 04:33	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/31/23 14:43	02/01/23 04:33	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/31/23 14:43	02/01/23 04:33	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/31/23 14:43	02/01/23 04:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130	01/31/23 14:43	02/01/23 04:33	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Client Sample ID: PH01A

Lab Sample ID: 890-3920-2

Date Collected: 01/19/23 10:55

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	93		70 - 130	01/31/23 14:43	02/01/23 04:33	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			02/01/23 12:31	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			02/03/23 17:32	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		02/01/23 15:22	02/03/23 16:11	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 16:11	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 16:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	74		70 - 130			02/01/23 15:22	02/03/23 16:11	1
o-Terphenyl	74		70 - 130			02/01/23 15:22	02/03/23 16:11	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2370		25.1	mg/Kg			01/27/23 21:54	5

Client Sample ID: PH01B

Lab Sample ID: 890-3920-3

Date Collected: 01/19/23 11:50

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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		01/31/23 14:43	02/01/23 04:54	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/31/23 14:43	02/01/23 04:54	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/31/23 14:43	02/01/23 04:54	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		01/31/23 14:43	02/01/23 04:54	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/31/23 14:43	02/01/23 04:54	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		01/31/23 14:43	02/01/23 04:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	01/31/23 14:43	02/01/23 04:54	1
1,4-Difluorobenzene (Surr)	88		70 - 130	01/31/23 14:43	02/01/23 04:54	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			02/01/23 12:31	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			02/03/23 17:32	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Client Sample ID: PH01B

Lab Sample ID: 890-3920-3

Date Collected: 01/19/23 11:50

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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		02/01/23 15:22	02/03/23 16:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 16:32	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 16:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130			02/01/23 15:22	02/03/23 16:32	1
o-Terphenyl	72		70 - 130			02/01/23 15:22	02/03/23 16:32	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1330		25.3	mg/Kg			01/27/23 21:59	5

Client Sample ID: PH01C

Lab Sample ID: 890-3920-4

Date Collected: 01/19/23 13:25

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 16'

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		01/31/23 14:43	02/01/23 05:14	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/31/23 14:43	02/01/23 05:14	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/31/23 14:43	02/01/23 05:14	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		01/31/23 14:43	02/01/23 05:14	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/31/23 14:43	02/01/23 05:14	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		01/31/23 14:43	02/01/23 05:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130			01/31/23 14:43	02/01/23 05:14	1
1,4-Difluorobenzene (Surr)	91		70 - 130			01/31/23 14:43	02/01/23 05:14	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			02/01/23 12:31	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			02/03/23 17:32	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		02/01/23 15:22	02/03/23 16:53	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 16:53	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 16:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130			02/01/23 15:22	02/03/23 16:53	1
o-Terphenyl	72		70 - 130			02/01/23 15:22	02/03/23 16:53	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Client Sample ID: PH01C

Date Collected: 01/19/23 13:25

Date Received: 01/23/23 16:15

Sample Depth: 16'

Lab Sample ID: 890-3920-4

Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	1820		25.0	mg/Kg			01/27/23 22:04	5	

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

Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

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)
890-3920-1	PH01	85	96
890-3920-1 MS	PH01	106	100
890-3920-1 MSD	PH01	92	109
890-3920-2	PH01A	84	93
890-3920-3	PH01B	97	88
890-3920-4	PH01C	90	91
LCS 880-45149/1-A	Lab Control Sample	101	108
LCSD 880-45149/2-A	Lab Control Sample Dup	103	104
MB 880-45146/5-A	Method Blank	68 S1-	92
MB 880-45149/5-A	Method Blank	74	91
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3911-A-1-F MS	Matrix Spike	84	75
890-3911-A-1-G MSD	Matrix Spike Duplicate	87	75
890-3920-1	PH01	76	76
890-3920-2	PH01A	74	74
890-3920-3	PH01B	72	72
890-3920-4	PH01C	72	72
LCS 880-45214/2-A	Lab Control Sample	87	84
LCSD 880-45214/3-A	Lab Control Sample Dup	87	84
MB 880-45214/1-A	Method Blank	96	102
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-45146/5-A

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45146

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:29	01/31/23 17:14	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:29	01/31/23 17:14	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:29	01/31/23 17:14	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/31/23 14:29	01/31/23 17:14	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:29	01/31/23 17:14	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/31/23 14:29	01/31/23 17:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68	S1-	70 - 130	01/31/23 14:29	01/31/23 17:14	1
1,4-Difluorobenzene (Surr)	92		70 - 130	01/31/23 14:29	01/31/23 17:14	1

Lab Sample ID: MB 880-45149/5-A

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45149

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:43	02/01/23 03:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:43	02/01/23 03:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:43	02/01/23 03:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/31/23 14:43	02/01/23 03:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:43	02/01/23 03:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/31/23 14:43	02/01/23 03:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130	01/31/23 14:43	02/01/23 03:51	1
1,4-Difluorobenzene (Surr)	91		70 - 130	01/31/23 14:43	02/01/23 03:51	1

Lab Sample ID: LCS 880-45149/1-A

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1036		mg/Kg		104	70 - 130
Toluene	0.100	0.09150		mg/Kg		92	70 - 130
Ethylbenzene	0.100	0.09043		mg/Kg		90	70 - 130
m-Xylene & p-Xylene	0.200	0.1882		mg/Kg		94	70 - 130
o-Xylene	0.100	0.09431		mg/Kg		94	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: LCSD 880-45149/2-A

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45149

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1062		mg/Kg		106	70 - 130	2	35

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

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

Lab Sample ID: LCSD 880-45149/2-A

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45149

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.09716		mg/Kg		97	70 - 130	6	35
Ethylbenzene	0.100	0.09608		mg/Kg		96	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2004		mg/Kg		100	70 - 130	6	35
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-3920-1 MS

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: PH01

Prep Type: Total/NA

Prep Batch: 45149

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U	0.101	0.08904		mg/Kg		88	70 - 130
Toluene	<0.00202	U	0.101	0.08562		mg/Kg		85	70 - 130
Ethylbenzene	<0.00202	U	0.101	0.08420		mg/Kg		84	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.202	0.1762		mg/Kg		87	70 - 130
o-Xylene	<0.00202	U	0.101	0.08713		mg/Kg		86	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-3920-1 MSD

Matrix: Solid

Analysis Batch: 45131

Client Sample ID: PH01

Prep Type: Total/NA

Prep Batch: 45149

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	0.1028		mg/Kg		103	70 - 130	14	35
Toluene	<0.00202	U	0.0996	0.08344		mg/Kg		84	70 - 130	3	35
Ethylbenzene	<0.00202	U	0.0996	0.07815		mg/Kg		78	70 - 130	7	35
m-Xylene & p-Xylene	<0.00403	U	0.199	0.1543		mg/Kg		77	70 - 130	13	35
o-Xylene	<0.00202	U	0.0996	0.07563		mg/Kg		76	70 - 130	14	35

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

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

Lab Sample ID: MB 880-45214/1-A

Matrix: Solid

Analysis Batch: 45303

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45214

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 09:09	1

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

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

Lab Sample ID: MB 880-45214/1-A

Matrix: Solid

Analysis Batch: 45303

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45214

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 09:09	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/01/23 15:22	02/03/23 09:09	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			02/01/23 15:22	02/03/23 09:09	1
o-Terphenyl	102		70 - 130			02/01/23 15:22	02/03/23 09:09	1

Lab Sample ID: LCS 880-45214/2-A

Matrix: Solid

Analysis Batch: 45303

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	999	861.4		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	999	983.6		mg/Kg		98	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	87		70 - 130				
o-Terphenyl	84		70 - 130				

Lab Sample ID: LCSD 880-45214/3-A

Matrix: Solid

Analysis Batch: 45303

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45214

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	999	830.8		mg/Kg		83	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	999	938.1		mg/Kg		94	70 - 130	5	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	87		70 - 130						
o-Terphenyl	84		70 - 130						

Lab Sample ID: 890-3911-A-1-F MS

Matrix: Solid

Analysis Batch: 45303

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45214

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	814.9		mg/Kg		78	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	956.9		mg/Kg		94	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	84		70 - 130						
o-Terphenyl	75		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

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

Lab Sample ID: 890-3911-A-1-G MSD

Matrix: Solid

Analysis Batch: 45303

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45214

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	840.6		mg/Kg		81	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	972.0		mg/Kg		96	70 - 130	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	87		70 - 130								
o-Terphenyl	75		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44790/1-A

Matrix: Solid

Analysis Batch: 44922

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			01/27/23 21:21	1

Lab Sample ID: LCS 880-44790/2-A

Matrix: Solid

Analysis Batch: 44922

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	265.2		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-44790/3-A

Matrix: Solid

Analysis Batch: 44922

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	265.6		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 890-3919-A-21-B MS

Matrix: Solid

Analysis Batch: 44922

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	276		1260	1656		mg/Kg		110	90 - 110

Lab Sample ID: 890-3919-A-21-C MSD

Matrix: Solid

Analysis Batch: 44922

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	276		1260	1643		mg/Kg		108	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

GC VOA

Analysis Batch: 45131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Total/NA	Solid	8021B	45149
890-3920-2	PH01A	Total/NA	Solid	8021B	45149
890-3920-3	PH01B	Total/NA	Solid	8021B	45149
890-3920-4	PH01C	Total/NA	Solid	8021B	45149
MB 880-45146/5-A	Method Blank	Total/NA	Solid	8021B	45146
MB 880-45149/5-A	Method Blank	Total/NA	Solid	8021B	45149
LCS 880-45149/1-A	Lab Control Sample	Total/NA	Solid	8021B	45149
LCSD 880-45149/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45149
890-3920-1 MS	PH01	Total/NA	Solid	8021B	45149
890-3920-1 MSD	PH01	Total/NA	Solid	8021B	45149

Prep Batch: 45146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-45146/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 45149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Total/NA	Solid	5035	
890-3920-2	PH01A	Total/NA	Solid	5035	
890-3920-3	PH01B	Total/NA	Solid	5035	
890-3920-4	PH01C	Total/NA	Solid	5035	
MB 880-45149/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45149/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45149/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3920-1 MS	PH01	Total/NA	Solid	5035	
890-3920-1 MSD	PH01	Total/NA	Solid	5035	

Analysis Batch: 45196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Total/NA	Solid	Total BTEX	
890-3920-2	PH01A	Total/NA	Solid	Total BTEX	
890-3920-3	PH01B	Total/NA	Solid	Total BTEX	
890-3920-4	PH01C	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 45214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Total/NA	Solid	8015NM Prep	
890-3920-2	PH01A	Total/NA	Solid	8015NM Prep	
890-3920-3	PH01B	Total/NA	Solid	8015NM Prep	
890-3920-4	PH01C	Total/NA	Solid	8015NM Prep	
MB 880-45214/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45214/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45214/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3911-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3911-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 45303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Total/NA	Solid	8015B NM	45214

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

GC Semi VOA (Continued)

Analysis Batch: 45303 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-2	PH01A	Total/NA	Solid	8015B NM	45214
890-3920-3	PH01B	Total/NA	Solid	8015B NM	45214
890-3920-4	PH01C	Total/NA	Solid	8015B NM	45214
MB 880-45214/1-A	Method Blank	Total/NA	Solid	8015B NM	45214
LCS 880-45214/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45214
LCSD 880-45214/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45214
890-3911-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	45214
890-3911-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45214

Analysis Batch: 45430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Total/NA	Solid	8015 NM	
890-3920-2	PH01A	Total/NA	Solid	8015 NM	
890-3920-3	PH01B	Total/NA	Solid	8015 NM	
890-3920-4	PH01C	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 44790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Soluble	Solid	DI Leach	
890-3920-2	PH01A	Soluble	Solid	DI Leach	
890-3920-3	PH01B	Soluble	Solid	DI Leach	
890-3920-4	PH01C	Soluble	Solid	DI Leach	
MB 880-44790/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3919-A-21-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3919-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 44922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3920-1	PH01	Soluble	Solid	300.0	44790
890-3920-2	PH01A	Soluble	Solid	300.0	44790
890-3920-3	PH01B	Soluble	Solid	300.0	44790
890-3920-4	PH01C	Soluble	Solid	300.0	44790
MB 880-44790/1-A	Method Blank	Soluble	Solid	300.0	44790
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	300.0	44790
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44790
890-3919-A-21-B MS	Matrix Spike	Soluble	Solid	300.0	44790
890-3919-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44790

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Client Sample ID: PH01

Lab Sample ID: 890-3920-1

Date Collected: 01/19/23 10:40

Matrix: Solid

Date Received: 01/23/23 16:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	45149	01/31/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45131	02/01/23 04:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45196	02/01/23 12:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			45430	02/03/23 17:32	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45214	02/01/23 15:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45303	02/03/23 15:30	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 21:49	CH	EET MID

Client Sample ID: PH01A

Lab Sample ID: 890-3920-2

Date Collected: 01/19/23 10:55

Matrix: Solid

Date Received: 01/23/23 16:15

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	45149	01/31/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45131	02/01/23 04:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45196	02/01/23 12:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			45430	02/03/23 17:32	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45214	02/01/23 15:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45303	02/03/23 16:11	AJ	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 21:54	CH	EET MID

Client Sample ID: PH01B

Lab Sample ID: 890-3920-3

Date Collected: 01/19/23 11:50

Matrix: Solid

Date Received: 01/23/23 16:15

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	45149	01/31/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45131	02/01/23 04:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45196	02/01/23 12:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			45430	02/03/23 17:32	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	45214	02/01/23 15:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45303	02/03/23 16:32	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 21:59	CH	EET MID

Client Sample ID: PH01C

Lab Sample ID: 890-3920-4

Date Collected: 01/19/23 13:25

Matrix: Solid

Date Received: 01/23/23 16:15

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	45149	01/31/23 14:43	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45131	02/01/23 05:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45196	02/01/23 12:31	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Client Sample ID: PH01C

Lab Sample ID: 890-3920-4

Date Collected: 01/19/23 13:25

Matrix: Solid

Date Received: 01/23/23 16:15

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			45430	02/03/23 17:32	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45214	02/01/23 15:22	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45303	02/03/23 16:53	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:04	CH	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

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

- 1
- 2
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- 11
- 12
- 13
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Method Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

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

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3920-1
SDG: 03C1558156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3920-1	PH01	Solid	01/19/23 10:40	01/23/23 16:15	3'
890-3920-2	PH01A	Solid	01/19/23 10:55	01/23/23 16:15	6'
890-3920-3	PH01B	Solid	01/19/23 11:50	01/23/23 16:15	10'
890-3920-4	PH01C	Solid	01/19/23 13:25	01/23/23 16:15	16'

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Environment Testing
Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 986-3199

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Bell	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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:	Golden Child SWD		Turn Around	Pres. Code	ANALYSIS REQUEST																Preservative Codes			
Project Number:	03C1558156		☒ Routine ☐ Rush																None: NO	DI Water: H ₂ O				
Project Location:	Connor Whitman		Due Date:		TAT starts the day received by the lab, if received by 4:30pm																Cool: Cool	MeOH: Me		
Sampler's Name:																					HCL: HC	HNO ₃ : HN		
PO #:																					H ₂ SO ₄ : H ₂	NaOH: Na		
SAMPLE RECEIPT	Temp Blank:	(Yes) No	Well Ice:	(Yes) No	Parameters																H ₃ PO ₄ : HP			
Samples Received Intact:	(Yes) No	Thermometer ID:																			NaHSO ₄ : NABIS			
Cooler Custody Seals:	Yes No	Correction Factor:																			Na ₂ S ₂ O ₃ : NaSO ₃			
Sample Custody Seals:	Yes No	Temperature Reading:																			Zn Acetate+NaOH: Zn			
Total Containers:		Corrected Temperature:																			NaOH+Ascorbic Acid: SAPC			
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grav/Comp	# of Cont	CHLORIDES (EPA: 300.0)																Incident ID:	
							TPH (8015)																nAPR2232250506	
							BTEX (8021)																Cost Center:	
																							1081711001	
																							APE:	



890-3920 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 Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	1-23-23 16:15			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3920-1

SDG Number: 03C1558156

Login Number: 3920

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: 890-3920-1

SDG Number: 03C1558156

Login Number: 3920

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/25/23 12:13 PM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/3/2023 11:15:46 AM

JOB DESCRIPTION

Golden Child SWD

SDG NUMBER 03C1558156

JOB NUMBER

890-3921-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/3/2023 11:15:46 AM

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

Client: Ensolum
Project/Site: Golden Child SWD

Laboratory Job ID: 890-3921-1
SDG: 03C1558156

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Definitions/Glossary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low 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: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Job ID: 890-3921-1

Laboratory: Eurofins Carlsbad

Narrative	
	Job Narrative 890-3921-1

Receipt

The samples were received on 1/23/2023 4:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH03 (890-3921-1), PH03A (890-3921-2), PH03B (890-3921-3) and PH03C (890-3921-4).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-45266/5-A). Evidence of matrix interferences is not obvious.

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

GC Semi VOA

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.

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Client Sample ID: PH03

Lab Sample ID: 890-3921-1

Date Collected: 01/19/23 14:45

Matrix: Solid

Date Received: 01/23/23 16:15

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		01/31/23 14:36	02/01/23 01:37	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/31/23 14:36	02/01/23 01:37	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/31/23 14:36	02/01/23 01:37	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/31/23 14:36	02/01/23 01:37	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/31/23 14:36	02/01/23 01:37	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		01/31/23 14:36	02/01/23 01:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	01/31/23 14:36	02/01/23 01:37	1
1,4-Difluorobenzene (Surr)	112		70 - 130	01/31/23 14:36	02/01/23 01:37	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			02/01/23 12:53	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			02/03/23 11:29	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		02/01/23 13:08	02/03/23 04:51	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/01/23 13:08	02/03/23 04:51	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/01/23 13:08	02/03/23 04:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130	02/01/23 13:08	02/03/23 04:51	1
o-Terphenyl	105		70 - 130	02/01/23 13:08	02/03/23 04:51	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1270		25.0	mg/Kg			01/27/23 22:18	5

Client Sample ID: PH03A

Lab Sample ID: 890-3921-2

Date Collected: 01/19/23 15:00

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	02/01/23 01:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	02/01/23 01:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	02/01/23 01:57	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		01/31/23 14:36	02/01/23 01:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	02/01/23 01:57	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		01/31/23 14:36	02/01/23 01:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	01/31/23 14:36	02/01/23 01:57	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Client Sample ID: PH03A

Lab Sample ID: 890-3921-2

Date Collected: 01/19/23 15:00

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	114		70 - 130	01/31/23 14:36	02/01/23 01:57	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			02/01/23 12:53	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			02/03/23 11:29	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		02/01/23 13:08	02/03/23 05:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/01/23 13:08	02/03/23 05:13	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/01/23 13:08	02/03/23 05:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			02/01/23 13:08	02/03/23 05:13	1
o-Terphenyl	105		70 - 130			02/01/23 13:08	02/03/23 05:13	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1260		24.9	mg/Kg			01/27/23 22:23	5

Client Sample ID: PH03B

Lab Sample ID: 890-3921-3

Date Collected: 01/20/23 09:05

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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		02/02/23 13:22	02/02/23 21:47	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/02/23 13:22	02/02/23 21:47	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/02/23 13:22	02/02/23 21:47	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		02/02/23 13:22	02/02/23 21:47	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/02/23 13:22	02/02/23 21:47	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		02/02/23 13:22	02/02/23 21:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	02/02/23 13:22	02/02/23 21:47	1
1,4-Difluorobenzene (Surr)	110		70 - 130	02/02/23 13:22	02/02/23 21:47	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			02/03/23 10:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/03/23 11:33	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Client Sample ID: PH03B

Lab Sample ID: 890-3921-3

Date Collected: 01/20/23 09:05

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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		02/02/23 09:29	02/02/23 19:14	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 09:29	02/02/23 19:14	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 09:29	02/02/23 19:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			02/02/23 09:29	02/02/23 19:14	1
o-Terphenyl	110		70 - 130			02/02/23 09:29	02/02/23 19:14	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2520		25.0	mg/Kg			01/27/23 22:28	5

Client Sample ID: PH03C

Lab Sample ID: 890-3921-4

Date Collected: 01/20/23 09:50

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 16'

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		02/02/23 13:22	02/02/23 22:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 22:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 22:12	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/02/23 13:22	02/02/23 22:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 22:12	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/02/23 13:22	02/02/23 22:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130			02/02/23 13:22	02/02/23 22:12	1
1,4-Difluorobenzene (Surr)	99		70 - 130			02/02/23 13:22	02/02/23 22:12	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			02/03/23 10:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/03/23 11:33	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		02/02/23 09:29	02/02/23 19:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/23 09:29	02/02/23 19:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/23 09:29	02/02/23 19:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	85		70 - 130			02/02/23 09:29	02/02/23 19:35	1
o-Terphenyl	102		70 - 130			02/02/23 09:29	02/02/23 19:35	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Client Sample ID: PH03C
Date Collected: 01/20/23 09:50
Date Received: 01/23/23 16:15
Sample Depth: 16'

Lab Sample ID: 890-3921-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2630		25.0	mg/Kg			01/27/23 22:33	5

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

Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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)
880-23952-A-1-B MS	Matrix Spike	97	112
880-23952-A-1-C MSD	Matrix Spike Duplicate	98	112
890-3919-A-1-D MS	Matrix Spike	103	111
890-3919-A-1-E MSD	Matrix Spike Duplicate	101	113
890-3919-A-16-C MS	Matrix Spike	92	107
890-3919-A-16-D MSD	Matrix Spike Duplicate	94	109
890-3921-1	PH03	112	112
890-3921-2	PH03A	108	114
890-3921-3	PH03B	117	110
890-3921-4	PH03C	108	99
LCS 880-45147/1-A	Lab Control Sample	94	112
LCS 880-45242/1-A	Lab Control Sample	99	114
LCS 880-45266/1-A	Lab Control Sample	88	107
LCSD 880-45147/2-A	Lab Control Sample Dup	99	113
LCSD 880-45242/2-A	Lab Control Sample Dup	100	113
LCSD 880-45266/2-A	Lab Control Sample Dup	87	104
MB 880-45147/5-A	Method Blank	102	105
MB 880-45242/5-A	Method Blank	105	109
MB 880-45266/5-A	Method Blank	63 S1-	96
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-23972-A-21-H MS	Matrix Spike	91	88
880-23972-A-21-I MSD	Matrix Spike Duplicate	86	82
880-24224-A-1-E MS	Matrix Spike	98	104
880-24224-A-1-F MSD	Matrix Spike Duplicate	94	100
890-3921-1	PH03	103	105
890-3921-2	PH03A	102	105
890-3921-3	PH03B	90	110
890-3921-4	PH03C	85	102
LCS 880-45211/2-A	Lab Control Sample	111	100
LCS 880-45238/2-A	Lab Control Sample	75	79
LCSD 880-45211/3-A	Lab Control Sample Dup	115	105
LCSD 880-45238/3-A	Lab Control Sample Dup	73	79
MB 880-45211/1-A	Method Blank	124	130
MB 880-45238/1-A	Method Blank	110	135 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-45147/5-A

Matrix: Solid

Analysis Batch: 45129

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45147

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	01/31/23 17:29	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	01/31/23 17:29	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	01/31/23 17:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/31/23 14:36	01/31/23 17:29	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/31/23 14:36	01/31/23 17:29	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/31/23 14:36	01/31/23 17:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	01/31/23 14:36	01/31/23 17:29	1
1,4-Difluorobenzene (Surr)	105		70 - 130	01/31/23 14:36	01/31/23 17:29	1

Lab Sample ID: LCS 880-45147/1-A

Matrix: Solid

Analysis Batch: 45129

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08233		mg/Kg		82	70 - 130
Toluene	0.100	0.07766		mg/Kg		78	70 - 130
Ethylbenzene	0.100	0.07484		mg/Kg		75	70 - 130
m-Xylene & p-Xylene	0.200	0.1584		mg/Kg		79	70 - 130
o-Xylene	0.100	0.07668		mg/Kg		77	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: LCSD 880-45147/2-A

Matrix: Solid

Analysis Batch: 45129

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45147

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09378		mg/Kg		94	70 - 130	13	35
Toluene	0.100	0.08580		mg/Kg		86	70 - 130	10	35
Ethylbenzene	0.100	0.08489		mg/Kg		85	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.1784		mg/Kg		89	70 - 130	12	35
o-Xylene	0.100	0.08543		mg/Kg		85	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-23952-A-1-B MS

Matrix: Solid

Analysis Batch: 45129

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45147

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U	0.101	0.08219		mg/Kg		82	70 - 130
Toluene	<0.00202	U	0.101	0.07762		mg/Kg		77	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: 880-23952-A-1-B MS

Matrix: Solid

Analysis Batch: 45129

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45147

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U	0.101	0.07334		mg/Kg		73	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.202	0.1547		mg/Kg		77	70 - 130
o-Xylene	<0.00202	U	0.101	0.07303		mg/Kg		72	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 880-23952-A-1-C MSD

Matrix: Solid

Analysis Batch: 45129

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45147

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	0.08613		mg/Kg		86	70 - 130	5	35
Toluene	<0.00202	U	0.0996	0.07815		mg/Kg		78	70 - 130	1	35
Ethylbenzene	<0.00202	U	0.0996	0.07266		mg/Kg		73	70 - 130	1	35
m-Xylene & p-Xylene	<0.00403	U	0.199	0.1519		mg/Kg		76	70 - 130	2	35
o-Xylene	<0.00202	U	0.0996	0.07278		mg/Kg		73	70 - 130	0	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: MB 880-45242/5-A

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45242

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:47	02/02/23 12:05	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:47	02/02/23 12:05	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:47	02/02/23 12:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/02/23 09:47	02/02/23 12:05	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:47	02/02/23 12:05	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/02/23 09:47	02/02/23 12:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	02/02/23 09:47	02/02/23 12:05	1
1,4-Difluorobenzene (Surr)	109		70 - 130	02/02/23 09:47	02/02/23 12:05	1

Lab Sample ID: LCS 880-45242/1-A

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45242

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09517		mg/Kg		95	70 - 130
Toluene	0.100	0.09045		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.08892		mg/Kg		89	70 - 130
m-Xylene & p-Xylene	0.200	0.1883		mg/Kg		94	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: LCS 880-45242/1-A

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45242

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	0.100	0.08996		mg/Kg		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

Lab Sample ID: LCSD 880-45242/2-A

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45242

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1025		mg/Kg		102	70 - 130	7	35
Toluene	0.100	0.09679		mg/Kg		97	70 - 130	7	35
Ethylbenzene	0.100	0.09527		mg/Kg		95	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.1990		mg/Kg		99	70 - 130	6	35
o-Xylene	0.100	0.09447		mg/Kg		94	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 890-3919-A-1-D MS

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45242

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U	0.101	0.1051		mg/Kg		104	70 - 130
Toluene	<0.00202	U	0.101	0.1004		mg/Kg		100	70 - 130
Ethylbenzene	<0.00202	U	0.101	0.1018		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	<0.00404	U	0.202	0.2142		mg/Kg		106	70 - 130
o-Xylene	<0.00202	U	0.101	0.1021		mg/Kg		101	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 890-3919-A-1-E MSD

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45242

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	0.1018		mg/Kg		102	70 - 130	3	35
Toluene	<0.00202	U	0.0996	0.09704		mg/Kg		97	70 - 130	3	35
Ethylbenzene	<0.00202	U	0.0996	0.09789		mg/Kg		98	70 - 130	4	35
m-Xylene & p-Xylene	<0.00404	U	0.199	0.2047		mg/Kg		103	70 - 130	5	35
o-Xylene	<0.00202	U	0.0996	0.09807		mg/Kg		98	70 - 130	4	35

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: 890-3919-A-1-E MSD

Matrix: Solid

Analysis Batch: 45232

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45242

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: MB 880-45266/5-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45266

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1	
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/02/23 13:22	02/02/23 18:47	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/02/23 13:22	02/02/23 18:47	1	
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
4-Bromofluorobenzene (Surr)	63	S1-	70 - 130			02/02/23 13:22	02/02/23 18:47	1	
1,4-Difluorobenzene (Surr)	96		70 - 130			02/02/23 13:22	02/02/23 18:47	1	

Lab Sample ID: LCS 880-45266/1-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45266

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	0.100	0.1088		mg/Kg		109	70 - 130		
Toluene	0.100	0.09587		mg/Kg		96	70 - 130		
Ethylbenzene	0.100	0.09476		mg/Kg		95	70 - 130		
m-Xylene & p-Xylene	0.200	0.1927		mg/Kg		96	70 - 130		
o-Xylene	0.100	0.1001		mg/Kg		100	70 - 130		
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	88		70 - 130						
1,4-Difluorobenzene (Surr)	107		70 - 130						

Lab Sample ID: LCSD 880-45266/2-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45266

	Spike	LCSD	LCSD					%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.09665		mg/Kg		97	70 - 130	12	35	
Toluene	0.100	0.1019		mg/Kg		102	70 - 130	6	35	
Ethylbenzene	0.100	0.1030		mg/Kg		103	70 - 130	8	35	
m-Xylene & p-Xylene	0.200	0.2070		mg/Kg		103	70 - 130	7	35	
o-Xylene	0.100	0.1036		mg/Kg		104	70 - 130	4	35	
	LCSD	LCSD								
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	87		70 - 130							

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: LCSD 880-45266/2-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45266

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

Lab Sample ID: 890-3919-A-16-C MS

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45266

	Sample	Sample	Spike	MS	MS			%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00201	U	0.100	0.1131		mg/Kg		113	70 - 130
Toluene	<0.00201	U	0.100	0.1045		mg/Kg		104	70 - 130
Ethylbenzene	<0.00201	U	0.100	0.1062		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00201	U	0.100	0.1032		mg/Kg		103	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 890-3919-A-16-D MSD

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45266

	Sample	Sample	Spike	MSD	MSD			%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U	0.0990	0.1138		mg/Kg		115	70 - 130	1	35
Toluene	<0.00201	U	0.0990	0.1035		mg/Kg		105	70 - 130	1	35
Ethylbenzene	<0.00201	U	0.0990	0.1029		mg/Kg		104	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.2053		mg/Kg		104	70 - 130	3	35
o-Xylene	<0.00201	U	0.0990	0.1018		mg/Kg		103	70 - 130	1	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

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

Lab Sample ID: MB 880-45211/1-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45211

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/01/23 13:08	02/02/23 20:18		1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/01/23 13:08	02/02/23 20:18		1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/01/23 13:08	02/02/23 20:18		1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil	Fac		
1-Chlorooctane	124		70 - 130	02/01/23 13:08	02/02/23 20:18		1		
o-Terphenyl	130		70 - 130	02/01/23 13:08	02/02/23 20:18		1		

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: LCS 880-45211/2-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45211

Analyte			Spike	LCS	LCS				%Rec		
			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10			999	840.3		mg/Kg		84	70 - 130		
Diesel Range Organics (Over C10-C28)			999	922.3		mg/Kg		92	70 - 130		
		LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	111		70 - 130								
o-Terphenyl	100		70 - 130								

Lab Sample ID: LCSD 880-45211/3-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45211

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10			999	848.1		mg/Kg		85	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			999	939.0		mg/Kg		94	70 - 130	2	20
			LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	115		70 - 130								
o-Terphenyl	105		70 - 130								

Lab Sample ID: 880-23972-A-21-H MS

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45211

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1158		mg/Kg		112	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1015		mg/Kg		102	70 - 130		

Lab Sample ID: 880-23972-A-21-I MSD

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45211

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1061		mg/Kg		102	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	955.2		mg/Kg		96	70 - 130	6	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	86		70 - 130								

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: 880-23972-A-21-I MSD

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45211

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	82		70 - 130

Lab Sample ID: MB 880-45238/1-A

Matrix: Solid

Analysis Batch: 45228

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45238

	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil	Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/02/23 09:29	02/02/23 08:59	1	
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 09:29	02/02/23 08:59	1	
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 09:29	02/02/23 08:59	1	
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil	Fac
1-Chlorooctane	110		70 - 130			02/02/23 09:29	02/02/23 08:59	1	
<i>o</i> -Terphenyl	135	S1+	70 - 130			02/02/23 09:29	02/02/23 08:59	1	

Lab Sample ID: LCS 880-45238/2-A

Matrix: Solid

Analysis Batch: 45228

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45238

		Spike	LCS	LCS				%Rec	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10		999	879.4		mg/Kg		88	70 - 130	
Diesel Range Organics (Over C10-C28)		999	947.2		mg/Kg		95	70 - 130	
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	75		70 - 130						
<i>o</i> -Terphenyl	79		70 - 130						

Lab Sample ID: LCSD 880-45238/3-A

Matrix: Solid

Analysis Batch: 45228

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45238

		Spike	LCSD	LCSD				%Rec		RPD	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10		999	761.5		mg/Kg		76	70 - 130	14	20	
Diesel Range Organics (Over C10-C28)		999	932.5		mg/Kg		93	70 - 130	2	20	
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	73		70 - 130								
<i>o</i> -Terphenyl	79		70 - 130								

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Lab Sample ID: 880-24224-A-1-E MS

Matrix: Solid

Analysis Batch: 45228

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45238

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1239		mg/Kg		122	70 - 130
Diesel Range Organics (Over C10-C28)	80.3		1000	945.9		mg/Kg		87	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	98		70 - 130						
o-Terphenyl	104		70 - 130						

Lab Sample ID: 880-24224-A-1-F MSD

Matrix: Solid

Analysis Batch: 45228

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45238

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1179		mg/Kg		116	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	80.3		998	896.5		mg/Kg		82	70 - 130	5	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	94		70 - 130								
o-Terphenyl	100		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44790/1-A

Matrix: Solid

Analysis Batch: 44922

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			01/27/23 21:21	1

Lab Sample ID: LCS 880-44790/2-A

Matrix: Solid

Analysis Batch: 44922

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	265.2		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-44790/3-A

Matrix: Solid

Analysis Batch: 44922

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	265.6		mg/Kg		106	90 - 110	0	20

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3919-A-21-B MS										Client Sample ID: Matrix Spike		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 44922												
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits			
Chloride	276		1260	1656		mg/Kg		110	90 - 110			

Lab Sample ID: 890-3919-A-21-C MSD										Client Sample ID: Matrix Spike Duplicate		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 44922												
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit	
Chloride	276		1260	1643		mg/Kg		108	90 - 110	1	20	

QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

GC VOA

Analysis Batch: 45129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Total/NA	Solid	8021B	45147
890-3921-2	PH03A	Total/NA	Solid	8021B	45147
MB 880-45147/5-A	Method Blank	Total/NA	Solid	8021B	45147
LCS 880-45147/1-A	Lab Control Sample	Total/NA	Solid	8021B	45147
LCSD 880-45147/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45147
880-23952-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	45147
880-23952-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45147

Prep Batch: 45147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Total/NA	Solid	5035	
890-3921-2	PH03A	Total/NA	Solid	5035	
MB 880-45147/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45147/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45147/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23952-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-23952-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 45208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Total/NA	Solid	Total BTEX	
890-3921-2	PH03A	Total/NA	Solid	Total BTEX	
890-3921-3	PH03B	Total/NA	Solid	Total BTEX	
890-3921-4	PH03C	Total/NA	Solid	Total BTEX	

Analysis Batch: 45232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-45242/5-A	Method Blank	Total/NA	Solid	8021B	45242
LCS 880-45242/1-A	Lab Control Sample	Total/NA	Solid	8021B	45242
LCSD 880-45242/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45242
890-3919-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	45242
890-3919-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45242

Prep Batch: 45242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-45242/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45242/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45242/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3919-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-3919-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 45266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-3	PH03B	Total/NA	Solid	5035	
890-3921-4	PH03C	Total/NA	Solid	5035	
MB 880-45266/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45266/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45266/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3919-A-16-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3919-A-16-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

GC VOA

Analysis Batch: 45278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-3	PH03B	Total/NA	Solid	8021B	45266
890-3921-4	PH03C	Total/NA	Solid	8021B	45266
MB 880-45266/5-A	Method Blank	Total/NA	Solid	8021B	45266
LCS 880-45266/1-A	Lab Control Sample	Total/NA	Solid	8021B	45266
LCSD 880-45266/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45266
890-3919-A-16-C MS	Matrix Spike	Total/NA	Solid	8021B	45266
890-3919-A-16-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45266

GC Semi VOA

Prep Batch: 45211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Total/NA	Solid	8015NM Prep	
890-3921-2	PH03A	Total/NA	Solid	8015NM Prep	
MB 880-45211/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45211/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45211/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-23972-A-21-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-23972-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 45226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Total/NA	Solid	8015B NM	45211
890-3921-2	PH03A	Total/NA	Solid	8015B NM	45211
MB 880-45211/1-A	Method Blank	Total/NA	Solid	8015B NM	45211
LCS 880-45211/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45211
LCSD 880-45211/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45211
880-23972-A-21-H MS	Matrix Spike	Total/NA	Solid	8015B NM	45211
880-23972-A-21-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45211

Analysis Batch: 45228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-3	PH03B	Total/NA	Solid	8015B NM	45238
890-3921-4	PH03C	Total/NA	Solid	8015B NM	45238
MB 880-45238/1-A	Method Blank	Total/NA	Solid	8015B NM	45238
LCS 880-45238/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45238
LCSD 880-45238/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45238
880-24224-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	45238
880-24224-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45238

Prep Batch: 45238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-3	PH03B	Total/NA	Solid	8015NM Prep	
890-3921-4	PH03C	Total/NA	Solid	8015NM Prep	
MB 880-45238/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45238/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45238/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24224-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-24224-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

GC Semi VOA

Analysis Batch: 45364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Total/NA	Solid	8015 NM	
890-3921-2	PH03A	Total/NA	Solid	8015 NM	
890-3921-3	PH03B	Total/NA	Solid	8015 NM	
890-3921-4	PH03C	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 44790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Soluble	Solid	DI Leach	
890-3921-2	PH03A	Soluble	Solid	DI Leach	
890-3921-3	PH03B	Soluble	Solid	DI Leach	
890-3921-4	PH03C	Soluble	Solid	DI Leach	
MB 880-44790/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3919-A-21-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3919-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 44922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3921-1	PH03	Soluble	Solid	300.0	44790
890-3921-2	PH03A	Soluble	Solid	300.0	44790
890-3921-3	PH03B	Soluble	Solid	300.0	44790
890-3921-4	PH03C	Soluble	Solid	300.0	44790
MB 880-44790/1-A	Method Blank	Soluble	Solid	300.0	44790
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	300.0	44790
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44790
890-3919-A-21-B MS	Matrix Spike	Soluble	Solid	300.0	44790
890-3919-A-21-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44790

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Client Sample ID: PH03**Lab Sample ID: 890-3921-1****Date Collected: 01/19/23 14:45****Matrix: Solid****Date Received: 01/23/23 16:15**

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	45147	01/31/23 14:36	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45129	02/01/23 01:37	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45208	02/01/23 12:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			45364	02/03/23 11:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45211	02/01/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45226	02/03/23 04:51	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:18	CH	EET MID

Client Sample ID: PH03A**Lab Sample ID: 890-3921-2****Date Collected: 01/19/23 15:00****Matrix: Solid****Date Received: 01/23/23 16:15**

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	45147	01/31/23 14:36	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45129	02/01/23 01:57	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45208	02/01/23 12:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			45364	02/03/23 11:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45211	02/01/23 13:08	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45226	02/03/23 05:13	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:23	CH	EET MID

Client Sample ID: PH03B**Lab Sample ID: 890-3921-3****Date Collected: 01/20/23 09:05****Matrix: Solid****Date Received: 01/23/23 16:15**

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	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/02/23 21:47	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45208	02/03/23 10:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			45364	02/03/23 11:33	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	45238	02/02/23 09:29	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45228	02/02/23 19:14	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:28	CH	EET MID

Client Sample ID: PH03C**Lab Sample ID: 890-3921-4****Date Collected: 01/20/23 09:50****Matrix: Solid****Date Received: 01/23/23 16:15**

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	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/02/23 22:12	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45208	02/03/23 10:22	SM	EET MID

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Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Client Sample ID: PH03C

Date Collected: 01/20/23 09:50

Date Received: 01/23/23 16:15

Lab Sample ID: 890-3921-4

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			45364	02/03/23 11:33	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45238	02/02/23 09:29	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45228	02/02/23 19:35	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:33	CH	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

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

- 1
- 2
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- 12
- 13
- 14

Method Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3921-1
SDG: 03C1558156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3921-1	PH03	Solid	01/19/23 14:45	01/23/23 16:15	2'
890-3921-2	PH03A	Solid	01/19/23 15:00	01/23/23 16:15	6'
890-3921-3	PH03B	Solid	01/20/23 09:05	01/23/23 16:15	10'
890-3921-4	PH03C	Solid	01/20/23 09:50	01/23/23 16:15	16'

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Environment Testing
Xenco

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

Chain of Custody

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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

Project Name:	Golden Child SWD	Turn Around	Pres. Code	ANALYSIS REQUEST	Preservative Codes
Project Number:	03C1558156	☒ Routine ☐ Rush			
Project Location:		Due Date:			
Sampler's Name:	Connor Whitman	TAT starts the day received by the lab, if received by 4:30pm			
PO #:		Temp Blank:	Yes ☒ No ☐		
SAMPLE RECEIPT	Samples Received Intact:	Yes ☒ No ☐	Thermometer ID:	Yes ☒ No ☐	
	Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:	Yes ☒ No ☐	
	Sample Custody Seals:	Yes ☒ No ☐	Temperature Reading:	Yes ☒ No ☐	
	Total Containers:	Yes ☒ No ☐	Corrected Temperature:	Yes ☒ No ☐	



890-3921 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grav/Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
PH03	S	1/19/23	2:45	2'						Incident ID: nADP2232250506
PH03A	S	1/19/23	3:00	6'						Cost Center: 1081711001
PH03B	S	1/20/23	9:05	10'						
PH03C	S	1/20/23	9:50	16'						

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$3 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
<i>[Signature]</i>	<i>[Signature]</i>	1-23-23 1:05			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3921-1

SDG Number: 03C1558156

Login Number: 3921

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: 890-3921-1

SDG Number: 03C1558156

Login Number: 3921

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/25/23 12:13 PM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 2/5/2023 9:28:24 AM

JOB DESCRIPTION

Golden Child SWD
SDG NUMBER 03C1558156

JOB NUMBER

890-3922-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/5/2023 9:28:24 AM

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

Client: Ensolum
Project/Site: Golden Child SWD

Laboratory Job ID: 890-3922-1
SDG: 03C1558156

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Definitions/Glossary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Job ID: 890-3922-1

Laboratory: Eurofins Carlsbad

Narrative

**Job Narrative
890-3922-1****Receipt**

The samples were received on 1/23/2023 4:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH09 (890-3922-1), PH09A (890-3922-2), PH09B (890-3922-3) and PH09C (890-3922-4).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-45266/5-A). Evidence of matrix interferences is not obvious.

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

GC Semi VOA

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-3922-A-1-C MS) and (890-3922-A-1-D MSD). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-44790 and analytical batch 880-44922 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: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Client Sample ID: PH09

Lab Sample ID: 890-3922-1

Date Collected: 01/20/23 12:20

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 3'

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		02/02/23 13:22	02/02/23 22:38	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/02/23 13:22	02/02/23 22:38	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/02/23 13:22	02/02/23 22:38	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/02/23 13:22	02/02/23 22:38	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/02/23 13:22	02/02/23 22:38	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/02/23 13:22	02/02/23 22:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	02/02/23 13:22	02/02/23 22:38	1
1,4-Difluorobenzene (Surr)	106		70 - 130	02/02/23 13:22	02/02/23 22:38	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			02/03/23 10:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/05/23 09:18	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		02/02/23 13:37	02/04/23 11:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/23 13:37	02/04/23 11:37	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/23 13:37	02/04/23 11:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130	02/02/23 13:37	02/04/23 11:37	1
o-Terphenyl	115		70 - 130	02/02/23 13:37	02/04/23 11:37	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1770		24.8	mg/Kg			01/27/23 22:37	5

Client Sample ID: PH09A

Lab Sample ID: 890-3922-2

Date Collected: 01/20/23 13:00

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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		02/02/23 13:22	02/02/23 23:04	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/02/23 13:22	02/02/23 23:04	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/02/23 13:22	02/02/23 23:04	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/02/23 13:22	02/02/23 23:04	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/02/23 13:22	02/02/23 23:04	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/02/23 13:22	02/02/23 23:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	02/02/23 13:22	02/02/23 23:04	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Client Sample ID: PH09A

Lab Sample ID: 890-3922-2

Date Collected: 01/20/23 13:00

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	02/02/23 13:22	02/03/23 00:49	1
1,4-Difluorobenzene (Surr)	103		70 - 130	02/02/23 13:22	02/02/23 23:04	1
1,4-Difluorobenzene (Surr)	95		70 - 130	02/02/23 13:22	02/03/23 00:49	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			02/03/23 10:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/05/23 09:18	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		02/02/23 13:37	02/04/23 12:43	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 13:37	02/04/23 12:43	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 13:37	02/04/23 12:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			02/02/23 13:37	02/04/23 12:43	1
o-Terphenyl	110		70 - 130			02/02/23 13:37	02/04/23 12:43	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1380	F1	24.8	mg/Kg			01/27/23 22:42	5

Client Sample ID: PH09B

Lab Sample ID: 890-3922-3

Date Collected: 01/20/23 13:15

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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		02/02/23 13:22	02/03/23 01:15	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/03/23 01:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/03/23 01:15	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/02/23 13:22	02/03/23 01:15	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/03/23 01:15	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/02/23 13:22	02/03/23 01:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130			02/02/23 13:22	02/03/23 01:15	1
1,4-Difluorobenzene (Surr)	98		70 - 130			02/02/23 13:22	02/03/23 01:15	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			02/03/23 10:22	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Client Sample ID: PH09B

Lab Sample ID: 890-3922-3

Date Collected: 01/20/23 13:15

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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			02/05/23 09:18	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		02/02/23 13:37	02/04/23 13:05	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/23 13:37	02/04/23 13:05	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/23 13:37	02/04/23 13:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130			02/02/23 13:37	02/04/23 13:05	1
o-Terphenyl	113		70 - 130			02/02/23 13:37	02/04/23 13:05	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2020		24.9	mg/Kg			01/27/23 22:57	5

Client Sample ID: PH09C

Lab Sample ID: 890-3922-4

Date Collected: 01/20/23 14:15

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 16'

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		02/02/23 13:22	02/03/23 01:41	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/02/23 13:22	02/03/23 01:41	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/02/23 13:22	02/03/23 01:41	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/02/23 13:22	02/03/23 01:41	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/02/23 13:22	02/03/23 01:41	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/02/23 13:22	02/03/23 01:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130			02/02/23 13:22	02/03/23 01:41	1
1,4-Difluorobenzene (Surr)	99		70 - 130			02/02/23 13:22	02/03/23 01:41	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			02/03/23 10:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			02/05/23 09:18	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		02/02/23 13:37	02/04/23 13:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/23 13:37	02/04/23 13:27	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/23 13:37	02/04/23 13:27	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Client Sample ID: PH09C
Date Collected: 01/20/23 14:15
Date Received: 01/23/23 16:15
Sample Depth: 16'

Lab Sample ID: 890-3922-4
Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130	02/02/23 13:37	02/04/23 13:27	1
o-Terphenyl	117		70 - 130	02/02/23 13:37	02/04/23 13:27	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1660		25.2	mg/Kg			01/27/23 23:01	5

Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

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)
890-3919-A-16-C MS	Matrix Spike	92	107
890-3919-A-16-D MSD	Matrix Spike Duplicate	94	109
890-3922-1	PH09	102	106
890-3922-2	PH09A	94	103
890-3922-2	PH09A	94	95
890-3922-3	PH09B	109	98
890-3922-4	PH09C	101	99
LCS 880-45266/1-A	Lab Control Sample	88	107
LCSD 880-45266/2-A	Lab Control Sample Dup	87	104
MB 880-45266/5-A	Method Blank	63 S1-	96
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3922-1	PH09	105	115
890-3922-1 MS	PH09	17 S1-	10 S1-
890-3922-1 MSD	PH09	14 S1-	9 S1-
890-3922-2	PH09A	100	110
890-3922-3	PH09B	101	113
890-3922-4	PH09C	105	117
LCS 880-45267/2-A	Lab Control Sample	87	91
LCSD 880-45267/3-A	Lab Control Sample Dup	85	90
MB 880-45267/1-A	Method Blank	112	123
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-45266/5-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45266

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/02/23 13:22	02/02/23 18:47	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 13:22	02/02/23 18:47	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/02/23 13:22	02/02/23 18:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	63	S1-	70 - 130	02/02/23 13:22	02/02/23 18:47	1
1,4-Difluorobenzene (Surr)	96		70 - 130	02/02/23 13:22	02/02/23 18:47	1

Lab Sample ID: LCS 880-45266/1-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45266

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1088		mg/Kg		109	70 - 130
Toluene	0.100	0.09587		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.09476		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1927		mg/Kg		96	70 - 130
o-Xylene	0.100	0.1001		mg/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-45266/2-A

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45266

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09665		mg/Kg		97	70 - 130	12	35
Toluene	0.100	0.1019		mg/Kg		102	70 - 130	6	35
Ethylbenzene	0.100	0.1030		mg/Kg		103	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2070		mg/Kg		103	70 - 130	7	35
o-Xylene	0.100	0.1036		mg/Kg		104	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-3919-A-16-C MS

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45266

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.100	0.1131		mg/Kg		113	70 - 130
Toluene	<0.00201	U	0.100	0.1045		mg/Kg		104	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

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

Lab Sample ID: 890-3919-A-16-C MS

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45266

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.100	0.1062		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00201	U	0.100	0.1032		mg/Kg		103	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 890-3919-A-16-D MSD

Matrix: Solid

Analysis Batch: 45278

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45266

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.1138		mg/Kg		115	70 - 130	1	35
Toluene	<0.00201	U	0.0990	0.1035		mg/Kg		105	70 - 130	1	35
Ethylbenzene	<0.00201	U	0.0990	0.1029		mg/Kg		104	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.2053		mg/Kg		104	70 - 130	3	35
o-Xylene	<0.00201	U	0.0990	0.1018		mg/Kg		103	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

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

Lab Sample ID: MB 880-45267/1-A

Matrix: Solid

Analysis Batch: 45445

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45267

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/02/23 13:37	02/04/23 08:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 13:37	02/04/23 08:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 13:37	02/04/23 08:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130	02/02/23 13:37	02/04/23 08:56	1
o-Terphenyl	123		70 - 130	02/02/23 13:37	02/04/23 08:56	1

Lab Sample ID: LCS 880-45267/2-A

Matrix: Solid

Analysis Batch: 45445

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45267

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	999	888.9		mg/Kg		89	70 - 130
Diesel Range Organics (Over C10-C28)	999	860.4		mg/Kg		86	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

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

Lab Sample ID: LCS 880-45267/2-A
Matrix: Solid
Analysis Batch: 45445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 45267

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	91		70 - 130

Lab Sample ID: LCSD 880-45267/3-A
Matrix: Solid
Analysis Batch: 45445

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45267

			Spike	LCSD	LCSD				%Rec		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10			999	802.7		mg/Kg		80	70 - 130	10	20
Diesel Range Organics (Over C10-C28)			999	831.7		mg/Kg		83	70 - 130	3	20
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	85		70 - 130								
o-Terphenyl	90		70 - 130								

Lab Sample ID: 890-3922-1 MS
Matrix: Solid
Analysis Batch: 45445

Client Sample ID: PH09
Prep Type: Total/NA
Prep Batch: 45267

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1001		mg/Kg		100	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1023		mg/Kg		98	70 - 130		
	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	17	S1-	70 - 130								
o-Terphenyl	10	S1-	70 - 130								

Lab Sample ID: 890-3922-1 MSD
Matrix: Solid
Analysis Batch: 45445

Client Sample ID: PH09
Prep Type: Total/NA
Prep Batch: 45267

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	849.9		mg/Kg		85	70 - 130	16	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	922.7		mg/Kg		88	70 - 130	10	20
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	14	S1-	70 - 130								
o-Terphenyl	9	S1-	70 - 130								

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44790/1-A

Matrix: Solid

Analysis Batch: 44922

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			01/27/23 21:21	1

Lab Sample ID: LCS 880-44790/2-A

Matrix: Solid

Analysis Batch: 44922

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	265.2		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-44790/3-A

Matrix: Solid

Analysis Batch: 44922

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	265.6		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 890-3922-2 MS

Matrix: Solid

Analysis Batch: 44922

Client Sample ID: PH09A

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1380	F1	1240	2819	F1	mg/Kg		116	90 - 110

Lab Sample ID: 890-3922-2 MSD

Matrix: Solid

Analysis Batch: 44922

Client Sample ID: PH09A

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1380	F1	1240	2800	F1	mg/Kg		115	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

GC VOA

Prep Batch: 45266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Total/NA	Solid	5035	
890-3922-2	PH09A	Total/NA	Solid	5035	
890-3922-3	PH09B	Total/NA	Solid	5035	
890-3922-4	PH09C	Total/NA	Solid	5035	
MB 880-45266/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45266/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45266/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3919-A-16-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3919-A-16-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 45278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Total/NA	Solid	8021B	45266
890-3922-2	PH09A	Total/NA	Solid	8021B	45266
890-3922-2	PH09A	Total/NA	Solid	8021B	45266
890-3922-3	PH09B	Total/NA	Solid	8021B	45266
890-3922-4	PH09C	Total/NA	Solid	8021B	45266
MB 880-45266/5-A	Method Blank	Total/NA	Solid	8021B	45266
LCS 880-45266/1-A	Lab Control Sample	Total/NA	Solid	8021B	45266
LCSD 880-45266/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45266
890-3919-A-16-C MS	Matrix Spike	Total/NA	Solid	8021B	45266
890-3919-A-16-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45266

Analysis Batch: 45343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Total/NA	Solid	Total BTEX	
890-3922-2	PH09A	Total/NA	Solid	Total BTEX	
890-3922-3	PH09B	Total/NA	Solid	Total BTEX	
890-3922-4	PH09C	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 45267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Total/NA	Solid	8015NM Prep	
890-3922-2	PH09A	Total/NA	Solid	8015NM Prep	
890-3922-3	PH09B	Total/NA	Solid	8015NM Prep	
890-3922-4	PH09C	Total/NA	Solid	8015NM Prep	
MB 880-45267/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45267/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45267/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3922-1 MS	PH09	Total/NA	Solid	8015NM Prep	
890-3922-1 MSD	PH09	Total/NA	Solid	8015NM Prep	

Analysis Batch: 45445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Total/NA	Solid	8015B NM	45267
890-3922-2	PH09A	Total/NA	Solid	8015B NM	45267
890-3922-3	PH09B	Total/NA	Solid	8015B NM	45267
890-3922-4	PH09C	Total/NA	Solid	8015B NM	45267
MB 880-45267/1-A	Method Blank	Total/NA	Solid	8015B NM	45267

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

GC Semi VOA (Continued)

Analysis Batch: 45445 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-45267/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45267
LCSD 880-45267/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45267
890-3922-1 MS	PH09	Total/NA	Solid	8015B NM	45267
890-3922-1 MSD	PH09	Total/NA	Solid	8015B NM	45267

Analysis Batch: 45489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Total/NA	Solid	8015 NM	
890-3922-2	PH09A	Total/NA	Solid	8015 NM	
890-3922-3	PH09B	Total/NA	Solid	8015 NM	
890-3922-4	PH09C	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 44790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Soluble	Solid	DI Leach	
890-3922-2	PH09A	Soluble	Solid	DI Leach	
890-3922-3	PH09B	Soluble	Solid	DI Leach	
890-3922-4	PH09C	Soluble	Solid	DI Leach	
MB 880-44790/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3922-2 MS	PH09A	Soluble	Solid	DI Leach	
890-3922-2 MSD	PH09A	Soluble	Solid	DI Leach	

Analysis Batch: 44922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3922-1	PH09	Soluble	Solid	300.0	44790
890-3922-2	PH09A	Soluble	Solid	300.0	44790
890-3922-3	PH09B	Soluble	Solid	300.0	44790
890-3922-4	PH09C	Soluble	Solid	300.0	44790
MB 880-44790/1-A	Method Blank	Soluble	Solid	300.0	44790
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	300.0	44790
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44790
890-3922-2 MS	PH09A	Soluble	Solid	300.0	44790
890-3922-2 MSD	PH09A	Soluble	Solid	300.0	44790

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Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Client Sample ID: PH09

Lab Sample ID: 890-3922-1

Date Collected: 01/20/23 12:20

Matrix: Solid

Date Received: 01/23/23 16:15

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	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/02/23 22:38	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45343	02/03/23 10:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45489	02/05/23 09:18	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	45267	02/02/23 13:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45445	02/04/23 11:37	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:37	CH	EET MID

Client Sample ID: PH09A

Lab Sample ID: 890-3922-2

Date Collected: 01/20/23 13:00

Matrix: Solid

Date Received: 01/23/23 16:15

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	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/02/23 23:04	AJ	EET MID
Total/NA	Prep	5035			5.03 g	5 mL	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/03/23 00:49	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45343	02/03/23 10:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45489	02/05/23 09:18	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45267	02/02/23 13:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45445	02/04/23 12:43	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:42	CH	EET MID

Client Sample ID: PH09B

Lab Sample ID: 890-3922-3

Date Collected: 01/20/23 13:15

Matrix: Solid

Date Received: 01/23/23 16:15

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	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/03/23 01:15	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45343	02/03/23 10:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45489	02/05/23 09:18	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45267	02/02/23 13:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45445	02/04/23 13:05	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 22:57	CH	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Client Sample ID: PH09C

Lab Sample ID: 890-3922-4

Date Collected: 01/20/23 14:15

Matrix: Solid

Date Received: 01/23/23 16:15

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	45266	02/02/23 13:22	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45278	02/03/23 01:41	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45343	02/03/23 10:22	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45489	02/05/23 09:18	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45267	02/02/23 13:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45445	02/04/23 13:27	AJ	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 23:01	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: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

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

Method Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3922-1
SDG: 03C1558156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3922-1	PH09	Solid	01/20/23 12:20	01/23/23 16:15	3'
890-3922-2	PH09A	Solid	01/20/23 13:00	01/23/23 16:15	6'
890-3922-3	PH09B	Solid	01/20/23 13:15	01/23/23 16:15	10'
890-3922-4	PH09C	Solid	01/20/23 14:15	01/23/23 16:15	16'

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Environment Testing
Xenco

Chain of Custody

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

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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:	Golden Child SWD	Turn Around	☒ Routine ☐ Rush	Pres. Code	
Project Number:	03C1558156	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					
Samples Received Intact:	Yes ☒ No ☐	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Cooler Custody Seals:	Yes ☒ No ☐	Thermometer ID:			
Sample Custody Seals:	Yes ☒ No ☐	Correction Factor:			
Total Containers:		Temperature Reading:			
		Corrected Temperature:			
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp
PH09	S	1/14/23	12:20	3'	G
PH09A	S		1:00	6'	
PH09B	S		1:15	10'	
PH09C	S		2:15	16'	
ANALYSIS REQUEST					
Parameters					
CHLORIDES (EPA: 300.0)					
TPH (8015)					
BTEX (8021)					
					
890-3922 Chain of Custody					
Preservative Codes					
None: NO ☐ DI Water: H ₂ O ☐					
Cool: Cool ☐ MeOH: Me ☐					
HCL: HC ☐ HNO ₃ : HN ☐					
H ₂ SO ₄ : H ₂ ☐ NaOH: Na ☐					
H ₃ PO ₄ : HP ☐					
NaHSO ₄ : NABIS ☐					
Na ₂ S ₂ O ₃ : NaSO ₃ ☐					
Zn Acetate+NaOH: Zn ☐					
NaOH+Ascorbic Acid: SAPC ☐					
Sample Comments					
Incident ID: nAPP2232250506					
Cost Center: 1081711001					
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 Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.			
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)
1 CTH	Amanda Stief	1-23-23 16:15	
3			
5			

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3922-1

SDG Number: 03C1558156

Login Number: 3922

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: 890-3922-1

SDG Number: 03C1558156

Login Number: 3922

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/25/23 12:13 PM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 2/5/2023 9:38:00 AM

JOB DESCRIPTION

Golden Child SWD
SDG NUMBER 03C1558156

JOB NUMBER

890-3923-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/5/2023 9:38:00 AM

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

Client: Ensolum
Project/Site: Golden Child SWD

Laboratory Job ID: 890-3923-1
SDG: 03C1558156

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Definitions/Glossary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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

Case Narrative

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Job ID: 890-3923-1

Laboratory: Eurofins Carlsbad

Narrative

**Job Narrative
890-3923-1**

Receipt

The samples were received on 1/23/2023 4:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH10 (890-3923-1), PH10A (890-3923-2) and PH10B (890-3923-3).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-45260 and analytical batch 880-45231 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-45236 and analytical batch 880-45226 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-45337 and analytical batch 880-45443 was 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 880-44790 and analytical batch 880-44922 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: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Client Sample ID: PH10

Lab Sample ID: 890-3923-1

Date Collected: 01/20/23 14:20

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 04:30	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 04:30	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 04:30	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/02/23 12:47	02/03/23 04:30	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 04:30	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/02/23 12:47	02/03/23 04:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130	02/02/23 12:47	02/03/23 04:30	1
1,4-Difluorobenzene (Surr)	70		70 - 130	02/02/23 12:47	02/03/23 04:30	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			02/03/23 09:11	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			02/03/23 11:29	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		02/02/23 09:26	02/02/23 19:14	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 19:14	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	106		70 - 130	02/02/23 09:26	02/02/23 19:14	1
o-Terphenyl	109		70 - 130	02/02/23 09:26	02/02/23 19:14	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	623		4.97	mg/Kg			01/27/23 23:16	1

Client Sample ID: PH10A

Lab Sample ID: 890-3923-2

Date Collected: 01/20/23 15:05

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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		02/02/23 12:47	02/03/23 04:50	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/02/23 12:47	02/03/23 04:50	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/02/23 12:47	02/03/23 04:50	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/02/23 12:47	02/03/23 04:50	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/02/23 12:47	02/03/23 04:50	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/02/23 12:47	02/03/23 04:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130	02/02/23 12:47	02/03/23 04:50	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Client Sample ID: PH10A

Lab Sample ID: 890-3923-2

Date Collected: 01/20/23 15:05

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 6'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	91		70 - 130	02/02/23 12:47	02/03/23 04:50	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			02/03/23 09:11	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			02/03/23 11:29	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		02/02/23 09:26	02/02/23 19:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 19:35	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 19:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130			02/02/23 09:26	02/02/23 19:35	1
o-Terphenyl	94		70 - 130			02/02/23 09:26	02/02/23 19:35	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1060		25.0	mg/Kg			01/27/23 23:21	5

Client Sample ID: PH10B

Lab Sample ID: 890-3923-3

Date Collected: 01/20/23 15:30

Matrix: Solid

Date Received: 01/23/23 16:15

Sample Depth: 10'

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		02/02/23 12:47	02/03/23 05:10	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 05:10	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 05:10	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/02/23 12:47	02/03/23 05:10	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/03/23 05:10	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/02/23 12:47	02/03/23 05:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	02/02/23 12:47	02/03/23 05:10	1
1,4-Difluorobenzene (Surr)	77		70 - 130	02/02/23 12:47	02/03/23 05:10	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			02/03/23 09:11	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			02/05/23 09:31	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Client Sample ID: PH10B
Date Collected: 01/20/23 15:30
Date Received: 01/23/23 16:15
Sample Depth: 10'

Lab Sample ID: 890-3923-3
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	50.0	mg/Kg		02/03/23 09:23	02/04/23 11:37	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 11:37	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 11:37	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	91		70 - 130			02/03/23 09:23	02/04/23 11:37	1	
o-Terphenyl	89		70 - 130			02/03/23 09:23	02/04/23 11:37	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	1100		24.8	mg/Kg			01/27/23 23:25	5	

Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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)
880-23958-A-1-E MS	Matrix Spike	98	96
880-23958-A-1-F MSD	Matrix Spike Duplicate	96	106
890-3923-1	PH10	78	70
890-3923-2	PH10A	83	91
890-3923-3	PH10B	111	77
LCS 880-45260/1-A	Lab Control Sample	106	101
LCSD 880-45260/2-A	Lab Control Sample Dup	96	110
MB 880-45241/5-A	Method Blank	75	92
MB 880-45260/5-A	Method Blank	69 S1-	91
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-24221-A-1-C MS	Matrix Spike	112	108
880-24221-A-1-D MSD	Matrix Spike Duplicate	125	115
890-3923-1	PH10	106	109
890-3923-2	PH10A	91	94
890-3923-3	PH10B	91	89
890-3923-3 MS	PH10B	107	86
890-3923-3 MSD	PH10B	123	98
LCS 880-45236/2-A	Lab Control Sample	98	104
LCS 880-45337/2-A	Lab Control Sample	107	92
LCSD 880-45236/3-A	Lab Control Sample Dup	102	108
LCSD 880-45337/3-A	Lab Control Sample Dup	125	107
MB 880-45236/1-A	Method Blank	120	127
MB 880-45337/1-A	Method Blank	112	110
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-45241/5-A

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45241

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:35	02/02/23 11:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:35	02/02/23 11:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:35	02/02/23 11:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/02/23 09:35	02/02/23 11:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 09:35	02/02/23 11:46	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/02/23 09:35	02/02/23 11:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	02/02/23 09:35	02/02/23 11:46	1
1,4-Difluorobenzene (Surr)	92		70 - 130	02/02/23 09:35	02/02/23 11:46	1

Lab Sample ID: MB 880-45260/5-A

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45260

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/02/23 22:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/02/23 22:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/02/23 22:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/02/23 12:47	02/02/23 22:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/02/23 12:47	02/02/23 22:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/02/23 12:47	02/02/23 22:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	69	S1-	70 - 130	02/02/23 12:47	02/02/23 22:21	1
1,4-Difluorobenzene (Surr)	91		70 - 130	02/02/23 12:47	02/02/23 22:21	1

Lab Sample ID: LCS 880-45260/1-A

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45260

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1073		mg/Kg		107	70 - 130
Toluene	0.100	0.09934		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1045		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2173		mg/Kg		109	70 - 130
o-Xylene	0.100	0.1087		mg/Kg		109	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 880-45260/2-A

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45260

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1234		mg/Kg		123	70 - 130	14	35

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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

Lab Sample ID: LCSD 880-45260/2-A

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45260

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.1051		mg/Kg		105	70 - 130	6	35
Ethylbenzene	0.100	0.1023		mg/Kg		102	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2062		mg/Kg		103	70 - 130	5	35
o-Xylene	0.100	0.1025		mg/Kg		103	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 880-23958-A-1-E MS

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45260

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U F1	0.0996	0.06296	F1	mg/Kg		63	70 - 130
Toluene	<0.00201	U F1	0.0996	0.06104	F1	mg/Kg		61	70 - 130
Ethylbenzene	<0.00201	U F1	0.0996	0.07124		mg/Kg		72	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.199	0.1314	F1	mg/Kg		66	70 - 130
o-Xylene	<0.00201	U F1	0.0996	0.06715	F1	mg/Kg		67	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 880-23958-A-1-F MSD

Matrix: Solid

Analysis Batch: 45231

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45260

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.100	0.07982		mg/Kg		80	70 - 130	24	35
Toluene	<0.00201	U F1	0.100	0.06423	F1	mg/Kg		64	70 - 130	5	35
Ethylbenzene	<0.00201	U F1	0.100	0.06510	F1	mg/Kg		65	70 - 130	9	35
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1272	F1	mg/Kg		63	70 - 130	3	35
o-Xylene	<0.00201	U F1	0.100	0.06595	F1	mg/Kg		66	70 - 130	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

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

Lab Sample ID: MB 880-45236/1-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45236

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 08:59	1

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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

Lab Sample ID: MB 880-45236/1-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45236

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 08:59	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/23 09:26	02/02/23 08:59	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	120		70 - 130			02/02/23 09:26	02/02/23 08:59	1
o-Terphenyl	127		70 - 130			02/02/23 09:26	02/02/23 08:59	1

Lab Sample ID: LCS 880-45236/2-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45236

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	999	967.2		mg/Kg		97	70 - 130
Diesel Range Organics (Over C10-C28)	999	942.1		mg/Kg		94	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	98		70 - 130				
o-Terphenyl	104		70 - 130				

Lab Sample ID: LCSD 880-45236/3-A

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45236

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	999	868.6		mg/Kg		87	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	999	959.3		mg/Kg		96	70 - 130	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	102		70 - 130						
o-Terphenyl	108		70 - 130						

Lab Sample ID: 880-24221-A-1-C MS

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45236

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 F1 F2	1000	885.7		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	997.3		mg/Kg		100	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	112		70 - 130						
o-Terphenyl	108		70 - 130						

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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

Lab Sample ID: 880-24221-A-1-D MSD

Matrix: Solid

Analysis Batch: 45226

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45236

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 F1 F2	998	1495	F1 F2	mg/Kg		147	70 - 130	51	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1074		mg/Kg		108	70 - 130	7	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	125		70 - 130								
o-Terphenyl	115		70 - 130								

Lab Sample ID: MB 880-45337/1-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45337

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 08:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 08:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 08:56	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130			02/03/23 09:23	02/04/23 08:56	1
o-Terphenyl	110		70 - 130			02/03/23 09:23	02/04/23 08:56	1

Lab Sample ID: LCS 880-45337/2-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45337

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	999	903.4		mg/Kg		90	70 - 130	
Diesel Range Organics (Over C10-C28)	999	878.2		mg/Kg		88	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits					
1-Chlorooctane	107		70 - 130					
o-Terphenyl	92		70 - 130					

Lab Sample ID: LCSD 880-45337/3-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	999	910.9		mg/Kg		91	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	999	1007		mg/Kg		101	70 - 130	14	20

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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

Lab Sample ID: LCSD 880-45337/3-A
Matrix: Solid
Analysis Batch: 45443

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 45337

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	125		70 - 130
o-Terphenyl	107		70 - 130

Lab Sample ID: 890-3923-3 MS
Matrix: Solid
Analysis Batch: 45443

Client Sample ID: PH10B
Prep Type: Total/NA
Prep Batch: 45337

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	1000	862.5		mg/Kg		84	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	883.8		mg/Kg		87	70 - 130	
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	107		70 - 130							
o-Terphenyl	86		70 - 130							

Lab Sample ID: 890-3923-3 MSD
Matrix: Solid
Analysis Batch: 45443

Client Sample ID: PH10B
Prep Type: Total/NA
Prep Batch: 45337

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	998	1297	F2	mg/Kg		127	70 - 130	40	20	
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1003		mg/Kg		99	70 - 130	13	20	
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	123		70 - 130									
o-Terphenyl	98		70 - 130									

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44790/1-A
Matrix: Solid
Analysis Batch: 44922

Client Sample ID: Method Blank
Prep Type: Soluble

	MB	MB								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	<5.00	U	5.00	mg/Kg			01/27/23 21:21	1		

Lab Sample ID: LCS 880-44790/2-A
Matrix: Solid
Analysis Batch: 44922

Client Sample ID: Lab Control Sample
Prep Type: Soluble

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	250	265.2		mg/Kg		106	90 - 110		

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-44790/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 44922											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	265.6		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 890-3922-A-2-B MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 44922											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1380	F1	1240	2819	F1	mg/Kg		116	90 - 110		

Lab Sample ID: 890-3922-A-2-C MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 44922											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1380	F1	1240	2800	F1	mg/Kg		115	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

GC VOA

Analysis Batch: 45231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Total/NA	Solid	8021B	45260
890-3923-2	PH10A	Total/NA	Solid	8021B	45260
890-3923-3	PH10B	Total/NA	Solid	8021B	45260
MB 880-45241/5-A	Method Blank	Total/NA	Solid	8021B	45241
MB 880-45260/5-A	Method Blank	Total/NA	Solid	8021B	45260
LCS 880-45260/1-A	Lab Control Sample	Total/NA	Solid	8021B	45260
LCSD 880-45260/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45260
880-23958-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	45260
880-23958-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45260

Prep Batch: 45241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-45241/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 45260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Total/NA	Solid	5035	
890-3923-2	PH10A	Total/NA	Solid	5035	
890-3923-3	PH10B	Total/NA	Solid	5035	
MB 880-45260/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45260/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45260/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23958-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-23958-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 45332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Total/NA	Solid	Total BTEX	
890-3923-2	PH10A	Total/NA	Solid	Total BTEX	
890-3923-3	PH10B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 45226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Total/NA	Solid	8015B NM	45236
890-3923-2	PH10A	Total/NA	Solid	8015B NM	45236
MB 880-45236/1-A	Method Blank	Total/NA	Solid	8015B NM	45236
LCS 880-45236/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45236
LCSD 880-45236/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45236
880-24221-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	45236
880-24221-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45236

Prep Batch: 45236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Total/NA	Solid	8015NM Prep	
890-3923-2	PH10A	Total/NA	Solid	8015NM Prep	
MB 880-45236/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45236/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45236/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-24221-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

GC Semi VOA (Continued)

Prep Batch: 45236 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-24221-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 45337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-3	PH10B	Total/NA	Solid	8015NM Prep	
MB 880-45337/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45337/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45337/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3923-3 MS	PH10B	Total/NA	Solid	8015NM Prep	
890-3923-3 MSD	PH10B	Total/NA	Solid	8015NM Prep	

Analysis Batch: 45361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Total/NA	Solid	8015 NM	
890-3923-2	PH10A	Total/NA	Solid	8015 NM	
890-3923-3	PH10B	Total/NA	Solid	8015 NM	

Analysis Batch: 45443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-3	PH10B	Total/NA	Solid	8015B NM	45337
MB 880-45337/1-A	Method Blank	Total/NA	Solid	8015B NM	45337
LCS 880-45337/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45337
LCSD 880-45337/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45337
890-3923-3 MS	PH10B	Total/NA	Solid	8015B NM	45337
890-3923-3 MSD	PH10B	Total/NA	Solid	8015B NM	45337

HPLC/IC

Leach Batch: 44790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Soluble	Solid	DI Leach	
890-3923-2	PH10A	Soluble	Solid	DI Leach	
890-3923-3	PH10B	Soluble	Solid	DI Leach	
MB 880-44790/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3922-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3922-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 44922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3923-1	PH10	Soluble	Solid	300.0	44790
890-3923-2	PH10A	Soluble	Solid	300.0	44790
890-3923-3	PH10B	Soluble	Solid	300.0	44790
MB 880-44790/1-A	Method Blank	Soluble	Solid	300.0	44790
LCS 880-44790/2-A	Lab Control Sample	Soluble	Solid	300.0	44790
LCSD 880-44790/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44790
890-3922-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	44790
890-3922-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44790

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Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Client Sample ID: PH10

Lab Sample ID: 890-3923-1

Date Collected: 01/20/23 14:20

Matrix: Solid

Date Received: 01/23/23 16:15

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	45260	02/02/23 12:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45231	02/03/23 04:30	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45332	02/03/23 09:11	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45361	02/03/23 11:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45236	02/02/23 09:26	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45226	02/02/23 19:14	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		1			44922	01/27/23 23:16	CH	EET MID

Client Sample ID: PH10A

Lab Sample ID: 890-3923-2

Date Collected: 01/20/23 15:05

Matrix: Solid

Date Received: 01/23/23 16:15

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	45260	02/02/23 12:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45231	02/03/23 04:50	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45332	02/03/23 09:11	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45361	02/03/23 11:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45236	02/02/23 09:26	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45226	02/02/23 19:35	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 23:21	CH	EET MID

Client Sample ID: PH10B

Lab Sample ID: 890-3923-3

Date Collected: 01/20/23 15:30

Matrix: Solid

Date Received: 01/23/23 16:15

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	45260	02/02/23 12:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45231	02/03/23 05:10	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			45332	02/03/23 09:11	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45361	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 11:37	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	44790	01/26/23 08:29	CH	EET MID
Soluble	Analysis	300.0		5			44922	01/27/23 23:25	CH	EET MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

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

Method Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3923-1
SDG: 03C1558156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3923-1	PH10	Solid	01/20/23 14:20	01/23/23 16:15	2'
890-3923-2	PH10A	Solid	01/20/23 15:05	01/23/23 16:15	6'
890-3923-3	PH10B	Solid	01/20/23 15:30	01/23/23 16:15	10'

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- 14



Environment Testing
Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 382-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Ben Belli	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	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:	303-867-2946	Email:	Garrett.Green@ExxonMobil.com

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

Project Name:	Golden Child SWD	Turn Around	☒ Routine ☐ Rush	Pres. Code		ANALYSIS REQUEST		Preservative Codes
Project Number:	03C1558156	Due Date:						None: NO DI Water: H ₂ O
Project Location:								Cool: Cool MeOH: Me
Sampler's Name:	Connor Whittman	TAT starts the day received by the lab, if received by 4:30pm						HCL: HC HNO ₃ : HN
PO #:								H ₂ SO ₄ : H ₂ NaOH: Na
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No Thermometer ID: <u>TM-001</u> Wet Ice: ☒ Yes ☐ No							H ₃ PO ₄ : HP
Samples Received Intact:	☒ Yes ☐ No	Correction Factor:	<u>1.0</u>					NaHSO ₄ : NABIS
Cooler Custody Seals:	☒ Yes ☐ No	Temperature Reading:	<u>1.8</u>					Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals:	☒ Yes ☐ No	Corrected Temperature:	<u>1.6</u>					Zn Acetate+NaOH: Zn
Total Containers:								NaOH+Ascorbic Acid: SACP
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grav/Comp	# of Cont		Sample Comments
PH10	S	1/20/23	2:20	2	G	1		Incident ID: nAPP2232250506
PH10A	S		3:05	6	G	1		Cost Center: 1081711001
PH10B	S		3:30	10	G	1		AFF: _____

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn			
Circle Method(s) and Metal(s) to be analyzed		TCIP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471			
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	1-23-23 16:25			
1					
3					
5					

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.

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3923-1

SDG Number: 03C1558156

Login Number: 3923

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: 890-3923-1

SDG Number: 03C1558156

Login Number: 3923

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/25/23 12:13 PM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ben Belill
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 2/5/2023 9:34:51 AM

JOB DESCRIPTION

Golden Child SWD
SDG NUMBER 03C1558156

JOB NUMBER

890-3945-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad**Job Notes**

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

Authorization

Generated
2/5/2023 9:34:51 AM

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

Client: Ensolum
Project/Site: Golden Child SWD

Laboratory Job ID: 890-3945-1
SDG: 03C1558156

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Definitions/Glossary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Job ID: 890-3945-1**Laboratory: Eurofins Carlsbad****Narrative****Job Narrative
890-3945-1****Receipt**

The samples were received on 1/24/2023 8:44 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 4.0°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH04 (890-3945-1), PH05 (890-3945-2), PH05A (890-3945-3), PH06 (890-3945-4), PH06A (890-3945-5), PH07 (890-3945-6), PH07A (890-3945-7) and PH08 (890-3945-8).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-45339 and analytical batch 880-45309 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: PH04 (890-3945-1) and (890-3944-A-1-G). 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) precision for preparation batch 880-45337 and analytical batch 880-45443 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

HPLC/IC

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

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH04

Lab Sample ID: 890-3945-1

Date Collected: 01/23/23 10:05

Matrix: Solid

Date Received: 01/24/23 08:44

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		02/03/23 09:50	02/03/23 13:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 13:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 13:06	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/03/23 09:50	02/03/23 13:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 13:06	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/03/23 09:50	02/03/23 13:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130	02/03/23 09:50	02/03/23 13:06	1
1,4-Difluorobenzene (Surr)	75		70 - 130	02/03/23 09:50	02/03/23 13:06	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			02/04/23 10:12	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			02/05/23 09:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 15:34	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 15:34	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 15:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	02/03/23 09:23	02/04/23 15:34	1
o-Terphenyl	81		70 - 130	02/03/23 09:23	02/04/23 15:34	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1180		25.0	mg/Kg			01/30/23 09:53	5

Client Sample ID: PH05

Lab Sample ID: 890-3945-2

Date Collected: 01/23/23 10:35

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:26	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:26	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:26	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 13:26	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:26	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 13:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130	02/03/23 09:50	02/03/23 13:26	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH05

Lab Sample ID: 890-3945-2

Date Collected: 01/23/23 10:35

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	80		70 - 130	02/03/23 09:50	02/03/23 13:26	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			02/04/23 10:12	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			02/05/23 09:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 16:17	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 16:17	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 16:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130			02/03/23 09:23	02/04/23 16:17	1
o-Terphenyl	77		70 - 130			02/03/23 09:23	02/04/23 16:17	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3610		25.0	mg/Kg			01/30/23 10:00	5

Client Sample ID: PH05A

Lab Sample ID: 890-3945-3

Date Collected: 01/23/23 10:50

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 4'

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		02/03/23 09:50	02/03/23 13:47	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:47	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:47	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 13:47	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 13:47	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 13:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		70 - 130	02/03/23 09:50	02/03/23 13:47	1
1,4-Difluorobenzene (Surr)	71		70 - 130	02/03/23 09:50	02/03/23 13:47	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			02/04/23 10:12	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			02/05/23 09:31	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH05A

Lab Sample ID: 890-3945-3

Date Collected: 01/23/23 10:50

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 4'

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		02/03/23 09:23	02/04/23 16:38	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 16:38	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 16:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 130			02/03/23 09:23	02/04/23 16:38	1
o-Terphenyl	86		70 - 130			02/03/23 09:23	02/04/23 16:38	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1920		24.8	mg/Kg			01/30/23 10:06	5

Client Sample ID: PH06

Lab Sample ID: 890-3945-4

Date Collected: 01/23/23 11:25

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 1'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/03/23 09:50	02/03/23 14:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:07	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/03/23 09:50	02/03/23 14:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130			02/03/23 09:50	02/03/23 14:07	1
1,4-Difluorobenzene (Surr)	80		70 - 130			02/03/23 09:50	02/03/23 14:07	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			02/04/23 10:12	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			02/05/23 09:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 17:01	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 17:01	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 17:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130			02/03/23 09:23	02/04/23 17:01	1
o-Terphenyl	90		70 - 130			02/03/23 09:23	02/04/23 17:01	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH06

Lab Sample ID: 890-3945-4

Date Collected: 01/23/23 11:25

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 1'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	451		4.99	mg/Kg			01/30/23 10:12	1

Client Sample ID: PH06A

Lab Sample ID: 890-3945-5

Date Collected: 01/23/23 11:40

Matrix: Solid

Date Received: 01/24/23 08:44

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		02/03/23 09:50	02/03/23 14:28	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:28	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:28	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/03/23 09:50	02/03/23 14:28	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 14:28	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/03/23 09:50	02/03/23 14:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130			02/03/23 09:50	02/03/23 14:28	1
1,4-Difluorobenzene (Surr)	87		70 - 130			02/03/23 09:50	02/03/23 14:28	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			02/04/23 10:12	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			02/05/23 09:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 17:22	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 17:22	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 17:22	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			02/03/23 09:23	02/04/23 17:22	1
o-Terphenyl	90		70 - 130			02/03/23 09:23	02/04/23 17:22	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1450		25.1	mg/Kg			01/30/23 10:30	5

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH07

Lab Sample ID: 890-3945-6

Date Collected: 01/23/23 12:30

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 1'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 14:48	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 14:48	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 14:48	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 14:48	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 14:48	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 14:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			02/03/23 09:50	02/03/23 14:48	1
1,4-Difluorobenzene (Surr)	81		70 - 130			02/03/23 09:50	02/03/23 14:48	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			02/04/23 10:12	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			02/05/23 09:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 17:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 17:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/03/23 09:23	02/04/23 17:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			02/03/23 09:23	02/04/23 17:43	1
o-Terphenyl	92		70 - 130			02/03/23 09:23	02/04/23 17:43	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4100		49.9	mg/Kg			01/30/23 10:37	10

Client Sample ID: PH07A

Lab Sample ID: 890-3945-7

Date Collected: 01/23/23 12:40

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 3'

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		02/03/23 09:50	02/03/23 15:09	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 15:09	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 15:09	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 15:09	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/03/23 09:50	02/03/23 15:09	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/03/23 09:50	02/03/23 15:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130			02/03/23 09:50	02/03/23 15:09	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH07A

Lab Sample ID: 890-3945-7

Date Collected: 01/23/23 12:40

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 3'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	78		70 - 130	02/03/23 09:50	02/03/23 15:09	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			02/04/23 10:12	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			02/05/23 09:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 18:05	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 18:05	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 18:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	81		70 - 130			02/03/23 09:23	02/04/23 18:05	1
o-Terphenyl	77		70 - 130			02/03/23 09:23	02/04/23 18:05	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2370		24.8	mg/Kg			01/30/23 10:43	5

Client Sample ID: PH08

Lab Sample ID: 890-3945-8

Date Collected: 01/23/23 13:40

Matrix: Solid

Date Received: 01/24/23 08:44

Sample Depth: 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 15:29	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 15:29	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 15:29	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/03/23 09:50	02/03/23 15:29	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 15:29	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/03/23 09:50	02/03/23 15:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130	02/03/23 09:50	02/03/23 15:29	1
1,4-Difluorobenzene (Surr)	86		70 - 130	02/03/23 09:50	02/03/23 15:29	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			02/04/23 10:12	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			02/05/23 09:31	1

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Client Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH08
Date Collected: 01/23/23 13:40
Date Received: 01/24/23 08:44
Sample Depth: 2'

Lab Sample ID: 890-3945-8
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 18:27	1	
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 18:27	1	
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 18:27	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	84		70 - 130			02/03/23 09:23	02/04/23 18:27	1	
o-Terphenyl	79		70 - 130			02/03/23 09:23	02/04/23 18:27	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	3990		25.0	mg/Kg			01/30/23 10:49	5	

Surrogate Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

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)
890-3944-A-1-E MS	Matrix Spike	64 S1-	88
890-3944-A-1-F MSD	Matrix Spike Duplicate	119	100
890-3945-1	PH04	78	75
890-3945-2	PH05	114	80
890-3945-3	PH05A	80	71
890-3945-4	PH06	82	80
890-3945-5	PH06A	92	87
890-3945-6	PH07	115	81
890-3945-7	PH07A	114	78
890-3945-8	PH08	112	86
LCS 880-45339/1-A	Lab Control Sample	98	95
LCSD 880-45339/2-A	Lab Control Sample Dup	104	95
MB 880-45339/5-A	Method Blank	75	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)
890-3923-A-3-E MS	Matrix Spike	107	86
890-3923-A-3-F MSD	Matrix Spike Duplicate	123	98
890-3945-1	PH04	86	81
890-3945-2	PH05	82	77
890-3945-3	PH05A	93	86
890-3945-4	PH06	99	90
890-3945-5	PH06A	97	90
890-3945-6	PH07	100	92
890-3945-7	PH07A	81	77
890-3945-8	PH08	84	79
LCS 880-45337/2-A	Lab Control Sample	107	92
LCSD 880-45337/3-A	Lab Control Sample Dup	125	107
MB 880-45337/1-A	Method Blank	112	110
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-45339/5-A

Matrix: Solid

Analysis Batch: 45309

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45339

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 12:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 12:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 12:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/03/23 09:50	02/03/23 12:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/03/23 09:50	02/03/23 12:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/03/23 09:50	02/03/23 12:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	02/03/23 09:50	02/03/23 12:24	1
1,4-Difluorobenzene (Surr)	93		70 - 130	02/03/23 09:50	02/03/23 12:24	1

Lab Sample ID: LCS 880-45339/1-A

Matrix: Solid

Analysis Batch: 45309

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45339

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1035		mg/Kg		103	70 - 130
Toluene	0.100	0.09635		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.09708		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	0.200	0.2017		mg/Kg		101	70 - 130
o-Xylene	0.100	0.1095		mg/Kg		109	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-45339/2-A

Matrix: Solid

Analysis Batch: 45309

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45339

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1043		mg/Kg		104	70 - 130	1	35
Toluene	0.100	0.09819		mg/Kg		98	70 - 130	2	35
Ethylbenzene	0.100	0.09855		mg/Kg		99	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2080		mg/Kg		104	70 - 130	3	35
o-Xylene	0.100	0.1070		mg/Kg		107	70 - 130	2	35

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

Lab Sample ID: 890-3944-A-1-E MS

Matrix: Solid

Analysis Batch: 45309

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45339

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0996	0.06961		mg/Kg		70	70 - 130
Toluene	<0.00200	U	0.0996	0.08014		mg/Kg		80	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

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

Lab Sample ID: 890-3944-A-1-E MS

Matrix: Solid

Analysis Batch: 45309

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45339

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0996	0.07706		mg/Kg		77	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.199	0.1174	F1	mg/Kg		59	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0996	0.05641	F1	mg/Kg		56	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	64	S1-	70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: 890-3944-A-1-F MSD

Matrix: Solid

Analysis Batch: 45309

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45339

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.09353		mg/Kg		93	70 - 130	29	35
Toluene	<0.00200	U	0.100	0.09465		mg/Kg		94	70 - 130	17	35
Ethylbenzene	<0.00200	U	0.100	0.1052		mg/Kg		105	70 - 130	31	35
m-Xylene & p-Xylene	<0.00399	U F1 F2	0.200	0.2304	F2	mg/Kg		115	70 - 130	65	35
o-Xylene	<0.00200	U F1 F2	0.100	0.1150	F2	mg/Kg		114	70 - 130	68	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

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

Lab Sample ID: MB 880-45337/1-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45337

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 08:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 08:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/03/23 09:23	02/04/23 08:56	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130	02/03/23 09:23	02/04/23 08:56	1
o-Terphenyl	110		70 - 130	02/03/23 09:23	02/04/23 08:56	1

Lab Sample ID: LCS 880-45337/2-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45337

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	999	903.4		mg/Kg		90	70 - 130
Diesel Range Organics (Over C10-C28)	999	878.2		mg/Kg		88	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

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

Lab Sample ID: LCS 880-45337/2-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 45337

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: LCSD 880-45337/3-A

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	999	910.9		mg/Kg		91	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	999	1007		mg/Kg		101	70 - 130	14	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	125		70 - 130
o-Terphenyl	107		70 - 130

Lab Sample ID: 890-3923-A-3-E MS

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 45337

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 F2	1000	862.5		mg/Kg		84	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	883.8		mg/Kg		87	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	107		70 - 130
o-Terphenyl	86		70 - 130

Lab Sample ID: 890-3923-A-3-F MSD

Matrix: Solid

Analysis Batch: 45443

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 45337

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F2	998	1297	F2	mg/Kg		127	70 - 130	40	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	1003		mg/Kg		99	70 - 130	13	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	123		70 - 130
o-Terphenyl	98		70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44970/1-A
Matrix: Solid
Analysis Batch: 45040

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			01/30/23 09:16	1

Lab Sample ID: LCS 880-44970/2-A
Matrix: Solid
Analysis Batch: 45040

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	253.2		mg/Kg		101	90 - 110

Lab Sample ID: LCSD 880-44970/3-A
Matrix: Solid
Analysis Batch: 45040

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	253.6		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 890-3944-A-1-B MS
Matrix: Solid
Analysis Batch: 45040

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.79		253	235.7		mg/Kg		91	90 - 110

Lab Sample ID: 890-3944-A-1-C MSD
Matrix: Solid
Analysis Batch: 45040

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5.79		253	238.0		mg/Kg		92	90 - 110	1	20

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

GC VOA

Analysis Batch: 45309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Total/NA	Solid	8021B	45339
890-3945-2	PH05	Total/NA	Solid	8021B	45339
890-3945-3	PH05A	Total/NA	Solid	8021B	45339
890-3945-4	PH06	Total/NA	Solid	8021B	45339
890-3945-5	PH06A	Total/NA	Solid	8021B	45339
890-3945-6	PH07	Total/NA	Solid	8021B	45339
890-3945-7	PH07A	Total/NA	Solid	8021B	45339
890-3945-8	PH08	Total/NA	Solid	8021B	45339
MB 880-45339/5-A	Method Blank	Total/NA	Solid	8021B	45339
LCS 880-45339/1-A	Lab Control Sample	Total/NA	Solid	8021B	45339
LCSD 880-45339/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45339
890-3944-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	45339
890-3944-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45339

Prep Batch: 45339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Total/NA	Solid	5035	
890-3945-2	PH05	Total/NA	Solid	5035	
890-3945-3	PH05A	Total/NA	Solid	5035	
890-3945-4	PH06	Total/NA	Solid	5035	
890-3945-5	PH06A	Total/NA	Solid	5035	
890-3945-6	PH07	Total/NA	Solid	5035	
890-3945-7	PH07A	Total/NA	Solid	5035	
890-3945-8	PH08	Total/NA	Solid	5035	
MB 880-45339/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45339/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45339/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3944-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-3944-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 45465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Total/NA	Solid	Total BTEX	
890-3945-2	PH05	Total/NA	Solid	Total BTEX	
890-3945-3	PH05A	Total/NA	Solid	Total BTEX	
890-3945-4	PH06	Total/NA	Solid	Total BTEX	
890-3945-5	PH06A	Total/NA	Solid	Total BTEX	
890-3945-6	PH07	Total/NA	Solid	Total BTEX	
890-3945-7	PH07A	Total/NA	Solid	Total BTEX	
890-3945-8	PH08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 45337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Total/NA	Solid	8015NM Prep	
890-3945-2	PH05	Total/NA	Solid	8015NM Prep	
890-3945-3	PH05A	Total/NA	Solid	8015NM Prep	
890-3945-4	PH06	Total/NA	Solid	8015NM Prep	
890-3945-5	PH06A	Total/NA	Solid	8015NM Prep	
890-3945-6	PH07	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

GC Semi VOA (Continued)

Prep Batch: 45337 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-7	PH07A	Total/NA	Solid	8015NM Prep	
890-3945-8	PH08	Total/NA	Solid	8015NM Prep	
MB 880-45337/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45337/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45337/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3923-A-3-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3923-A-3-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 45443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Total/NA	Solid	8015B NM	45337
890-3945-2	PH05	Total/NA	Solid	8015B NM	45337
890-3945-3	PH05A	Total/NA	Solid	8015B NM	45337
890-3945-4	PH06	Total/NA	Solid	8015B NM	45337
890-3945-5	PH06A	Total/NA	Solid	8015B NM	45337
890-3945-6	PH07	Total/NA	Solid	8015B NM	45337
890-3945-7	PH07A	Total/NA	Solid	8015B NM	45337
890-3945-8	PH08	Total/NA	Solid	8015B NM	45337
MB 880-45337/1-A	Method Blank	Total/NA	Solid	8015B NM	45337
LCS 880-45337/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45337
LCSD 880-45337/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45337
890-3923-A-3-E MS	Matrix Spike	Total/NA	Solid	8015B NM	45337
890-3923-A-3-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45337

Analysis Batch: 45500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Total/NA	Solid	8015 NM	
890-3945-2	PH05	Total/NA	Solid	8015 NM	
890-3945-3	PH05A	Total/NA	Solid	8015 NM	
890-3945-4	PH06	Total/NA	Solid	8015 NM	
890-3945-5	PH06A	Total/NA	Solid	8015 NM	
890-3945-6	PH07	Total/NA	Solid	8015 NM	
890-3945-7	PH07A	Total/NA	Solid	8015 NM	
890-3945-8	PH08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 44970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Soluble	Solid	DI Leach	
890-3945-2	PH05	Soluble	Solid	DI Leach	
890-3945-3	PH05A	Soluble	Solid	DI Leach	
890-3945-4	PH06	Soluble	Solid	DI Leach	
890-3945-5	PH06A	Soluble	Solid	DI Leach	
890-3945-6	PH07	Soluble	Solid	DI Leach	
890-3945-7	PH07A	Soluble	Solid	DI Leach	
890-3945-8	PH08	Soluble	Solid	DI Leach	
MB 880-44970/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44970/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44970/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3944-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	

Eurofins Carlsbad

QC Association Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

HPLC/IC (Continued)

Leach Batch: 44970 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3944-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 45040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3945-1	PH04	Soluble	Solid	300.0	44970
890-3945-2	PH05	Soluble	Solid	300.0	44970
890-3945-3	PH05A	Soluble	Solid	300.0	44970
890-3945-4	PH06	Soluble	Solid	300.0	44970
890-3945-5	PH06A	Soluble	Solid	300.0	44970
890-3945-6	PH07	Soluble	Solid	300.0	44970
890-3945-7	PH07A	Soluble	Solid	300.0	44970
890-3945-8	PH08	Soluble	Solid	300.0	44970
MB 880-44970/1-A	Method Blank	Soluble	Solid	300.0	44970
LCS 880-44970/2-A	Lab Control Sample	Soluble	Solid	300.0	44970
LCSD 880-44970/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44970
890-3944-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	44970
890-3944-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44970

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH04

Lab Sample ID: 890-3945-1

Date Collected: 01/23/23 10:05

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 13:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 15:34	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		5			45040	01/30/23 09:53	CH	EET MID

Client Sample ID: PH05

Lab Sample ID: 890-3945-2

Date Collected: 01/23/23 10:35

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 13:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 16:17	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		5			45040	01/30/23 10:00	CH	EET MID

Client Sample ID: PH05A

Lab Sample ID: 890-3945-3

Date Collected: 01/23/23 10:50

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 13:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 16:38	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		5			45040	01/30/23 10:06	CH	EET MID

Client Sample ID: PH06

Lab Sample ID: 890-3945-4

Date Collected: 01/23/23 11:25

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 14:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH06

Lab Sample ID: 890-3945-4

Date Collected: 01/23/23 11:25

Matrix: Solid

Date Received: 01/24/23 08:44

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			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 17:01	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		1			45040	01/30/23 10:12	CH	EET MID

Client Sample ID: PH06A

Lab Sample ID: 890-3945-5

Date Collected: 01/23/23 11:40

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 14:28	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 17:22	AJ	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		5			45040	01/30/23 10:30	CH	EET MID

Client Sample ID: PH07

Lab Sample ID: 890-3945-6

Date Collected: 01/23/23 12:30

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 14:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 17:43	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		10			45040	01/30/23 10:37	CH	EET MID

Client Sample ID: PH07A

Lab Sample ID: 890-3945-7

Date Collected: 01/23/23 12:40

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 15:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 18:05	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Client Sample ID: PH07A

Lab Sample ID: 890-3945-7

Date Collected: 01/23/23 12:40

Matrix: Solid

Date Received: 01/24/23 08:44

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.05 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		5			45040	01/30/23 10:43	CH	EET MID

Client Sample ID: PH08

Lab Sample ID: 890-3945-8

Date Collected: 01/23/23 13:40

Matrix: Solid

Date Received: 01/24/23 08:44

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	45339	02/03/23 09:50	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45309	02/03/23 15:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45465	02/04/23 10:12	AJ	EET MID
Total/NA	Analysis	8015 NM		1			45500	02/05/23 09:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45337	02/03/23 09:23	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45443	02/04/23 18:27	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	44970	01/29/23 17:45	KS	EET MID
Soluble	Analysis	300.0		5			45040	01/30/23 10:49	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: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

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

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

Method Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Golden Child SWD

Job ID: 890-3945-1
SDG: 03C1558156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3945-1	PH04	Solid	01/23/23 10:05	01/24/23 08:44	4'
890-3945-2	PH05	Solid	01/23/23 10:35	01/24/23 08:44	2'
890-3945-3	PH05A	Solid	01/23/23 10:50	01/24/23 08:44	4'
890-3945-4	PH06	Solid	01/23/23 11:25	01/24/23 08:44	1'
890-3945-5	PH06A	Solid	01/23/23 11:40	01/24/23 08:44	4'
890-3945-6	PH07	Solid	01/23/23 12:30	01/24/23 08:44	1'
890-3945-7	PH07A	Solid	01/23/23 12:40	01/24/23 08:44	3'
890-3945-8	PH08	Solid	01/23/23 13:40	01/24/23 08:44	2'



Environment Testing
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 986-3199

Chain of Custody

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Ben Beill	Bill to: (if different)	Garrett Green
Company Name:	Ensolium	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.com

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:	Golden Child SWD	Turn Around	Pres. Code	ANALYSIS REQUEST																Preservative Codes			
Project Number:	03C1558156	☒ Routine ☐ Rush																		None: NO	DI Water: H ₂ O		
Project Location:		Due Date:																		Cool: Cool	MeOH: Me		
Sampler's Name:	Connor Whitman	TAT starts the day received by the lab, if received by 4:30pm																		HCL: HC	HNO ₃ : HN		
PO #:		Well Ice:	☒ Yes ☐ No																	H ₂ SO ₄ : H ₂	NaOH: Na		
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☐ No	Thermometer ID:	TD-002																	H ₃ PO ₄ : HP			
Samples Received Intact:	☒ Yes ☐ No	Correction Factor:	4.2																	NaHSO ₄ : NABIS			
Cooler Custody Seals:	☒ Yes ☐ No	Temperature Reading:	4.2																	Na ₂ S ₂ O ₃ : NaSO ₃			
Sample Custody Seals:	☒ Yes ☐ No	Corrected Temperature:	4.0																	Zn Acetate+NaOH: Zn			
Total Containers:																				NaOH+Ascorbic Acid: SAPC			
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grav/Comp	# of Cont																	Sample Comments
PH04	S	1/23/23	10:05	4'	G	1	CHLORIDES (EPA: 300.0)																Incident ID: nAPP2232250506
PH05			10:35	2'		1	TPH (8015)																Cost Center: 1081711001
PH05A			10:50	4'		1	BTX (8021)																
PH06			11:25	1'		1																	
PH06A			11:40	4'		1																	AFF:
PH07			12:30	1'		1																	
PH07A			12:40	3'		1																	
PH08			1:40	2'		1																	



Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Ti	Sn	U	V	Zn				
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010: 8RCRA		Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U	Hg: 1631 / 245.1 / 7470 / 7471													

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1. CTT	[Signature]	01/24/23 08:30	2. [Signature]	[Signature]	1-24-23 08:43
3.					
5.					

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3945-1

SDG Number: 03C1558156

Login Number: 3945

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: 890-3945-1

SDG Number: 03C1558156

Login Number: 3945

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/25/23 12:13 PM

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



APPENDIX E

NMOCD Notifications

From: [Hamlet, Robert, EMNRD](#)
To: [Collins, Melanie](#)
Cc: [Ashley Ager](#); [Ben Belill](#); [Tacoma Morrissey](#); [DelawareSpills /SM](#); [Green, Garrett J](#); [Pennington, Shelby G](#); [Nobui, Jennifer, EMNRD](#); [Harimon, Jocelyn, EMNRD](#); [Bratcher, Michael, EMNRD](#)
Subject: (Extension Approval) - XTO - Golden Child SWD - Incident Number nAPP2232250506
Date: Tuesday, February 7, 2023 3:37:08 PM
Attachments: [image003.png](#)

[**EXTERNAL EMAIL**]

RE: Incident #NAPP2232250506

Melanie,

Your request for an extension to **May 8th, 2023** is approved. Please include this e-mail correspondence in the remediation and/or closure report.

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



From: Collins, Melanie <melanie.collins@exxonmobil.com>
Sent: Tuesday, February 7, 2023 11:01 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@emnrd.nm.gov>
Cc: Ashley Ager <aager@ensolum.com>; bbelill@ensolum.com; Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Pennington, Shelby G <shelby.g.pennington@exxonmobil.com>
Subject: [EXTERNAL] XTO - Extension Request - Golden Child SWD - Incident Number nAPP2232250506

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

All,

Golden Child SWD (Incident Number nAPP2232250506)

XTO is requesting an extension for the current deadline of February 7, 2023 for submitting a remediation work plan or closure report required in 19.15.29.12.B.(1) NMAC at the Golden Child SWD (Incident Number nAPP2232250506). The release occurred on November 9, 2022, and initial site assessment activities have been completed. Delineation activities are ongoing and analytical data is pending. In order to complete remediation efforts, review the laboratory analytical results, discuss remedial options, and submit a remediation work plan or closure report, XTO requests an extension until May 8, 2023.

Thank you,

Melanie Collins



Environmental Technician

melanie.collins@exxonmobil.com

432-556-3756

From: [Harimon, Jocelyn, EMNRD](#)
To: [Green, Garrett J](#); [Enviro, OCD, EMNRD](#); [Bratcher, Michael, EMNRD](#); [Hamlet, Robert, EMNRD](#)
Cc: [Tacoma Morrissey](#); [Ben Belill](#)
Subject: RE: [EXTERNAL] XTO - Sampling Notification (Week of 1/16/23 - 1/20/23)
Date: Friday, January 13, 2023 12:23:50 PM

[**EXTERNAL EMAIL **]

Garrett,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, January 13, 2023 10:20 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Ben Belill <bbelill@ensolum.com>
Subject: [EXTERNAL] XTO - Sampling Notification (Week of 1/16/23 - 1/20/23)

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

All,

XTO plans to complete final sampling activities at the following sites the week of Jan 16, 2023.

- Remuda 4-24-30 / nAPP2233351770
- Big Sinks 2-24-30 / NAB1913729531
- Pickett Draw / NAB1919955454
- PLU PC 28 / nAPP2233349315
- Golden Child SWD / nAPP2232250506

Thank you,

Garrett Green

Environmental Coordinator

Delaware Business Unit

(575) 200-0729

Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

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

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

CONDITIONS

Action 214096

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 214096
	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 located in an area with very shallow groundwater and will need to be remediated to the strictest closure criteria from Table 1 of the OCD Spill Rule. All background samples should be collected in 1-foot increments down to the depth equivalent to the deepest estimated depth of the excavation. The four background numbers at a depth of 1 foot should be averaged. The four 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. If rock refusal interferes with the remediation process, use a back-hoe/track-hoe to remove the rock. If the rock is immovable and target depth cannot be reached, use a hydrovac to clean the contaminated soil off the rock surface and outline specific locations and steps taken in the Closure Report. Please collect confirmation samples, representing no more than 200 ft2.	9/25/2023