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Incident ID	NAPP2232537823
District RP	
Facility ID	
Application ID	

### Closure

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

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.		
A scaled site and sampling diagram as described in 19.15.29.11 NMAC		
Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)		
☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)		
□ Description of remediation activities		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.  Printed Name: _Garrett Green Title: _Environmental Coordinator		
email:garrett.green@exxonmobil.com Telephone:575-200-0729		
OCD Only		
Received by: Jocelyn Harimon Date: 02/08/2023		
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.		
Closure Approved by: Robert Hamlet Date: 5/30/2023		
Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced		

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NAPP2232537823
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Facility ID	
Application ID	

### **Release Notification**

### **Responsible Party**

Responsible Party XTO Energy				OGRID 4	5380
Contact Name Garrett Green		Contact Te	elephone 575-200-0729		
Contact email garrett.green@exxonmobil.com		Incident #	(assigned by OCD)		
		3104 E. Greene St		w Mexico, 88220	
			Location	of Release So	ource
Latitude 32	.10185		(NAD 83 in dec	Longitude _cimal degrees to 5 decin	-103.84166 mal places)
Site Name	PLU 25 Brus	shy Draw 901H		Site Type	Production Well
Date Release		<u> </u>		API# (if app	
Unit Letter	Section	Township	Range	Coun	nty
Е	25	25S	30E	Edd	У
			l that apply and attach	l Volume of I	justification for the volumes provided below)
× Crude Oi				Volume Recovered (bbls) 0.35	
roduced Produced	Produced Water Volume Released (bbls) 5.69			Volume Recovered (bbls) 4.65	
Is the concentration of total dissolved soli in the produced water >10,000 mg/l?			Yes X No		
Condensate Volume Released (bbls)			Volume Recovered (bbls)		
☐ Natural Gas Volume Released (Mcf)			Volume Recovered (Mcf)		
Other (describe) Volume/Weight Released (provide units)		e units)	Volume/Weight Recovered (provide units)		
Cause of Rel	Corrosi				rids. Vac truck was dispatched and recovered all for remediation purposes.

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Was this a major	If YES, for what reason(s) does the respon	sible party consider this a major release?
release as defined by	N/A	
19.15.29.7(A) NMAC?		
☐ Yes 🗷 No		
If YES, was immediate no	otice given to the OCD? By whom? To wh	om? When and by what means (phone, email, etc)?
N/A		
	Initial Ro	esponse
The responsible p	party must undertake the following actions immediatel	vunless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.	
▼ The impacted area ha	s been secured to protect human health and	the environment.
▼ Released materials has	we been contained via the use of berms or d	ikes, absorbent pads, or other containment devices.
∡ All free liquids and re	ecoverable materials have been removed and	l managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain v	vhy:
NA		
has begun, please attach	a narrative of actions to date. If remedial	emediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred lease attach all information needed for closure evaluation.
regulations all operators are public health or the environr failed to adequately investig addition, OCD acceptance of and/or regulations.	required to report and/or file certain release notifient. The acceptance of a C-141 report by the O ate and remediate contamination that pose a three of a C-141 report does not relieve the operator of	best of my knowledge and understand that pursuant to OCD rules and fications and perform corrective actions for releases which may endanger CD does not relieve the operator of liability should their operations have at to groundwater, surface water, human health or the environment. In responsibility for compliance with any other federal, state, or local laws
Printed Name: Garrett Gr	reen	Title: SSHE Coordinator
Signature:	teen  MSuur	Date: 11/18/2022
email: garrett.green@exx	sonmobil.com	Telephone: 575-200-0729
OCD Only		
Received by:		Date:

Location:	PLU 25 Brushy Draw 901H		
Spill Date:	11/10/2022		
	Area 1		
Approximate A	rea =	1260.00	sq. ft.
Average Satura	tion (or depth) of spill =	2.00	inches
Average Porosity Factor = 0.03			
	VOLUME OF LEAK		
Total Crude Oil	=	0.43	bbls
Total Produced Water = 5.6		5.69	bbls
	TOTAL VOLUME OF LEAK		
Total Crude Oil	=	0.43	bbls
Total Produced Water = 5.6		5.69	bbls
TOTAL VOLUME RECOVERED			
Total Crude Oil	=	0.35	bbls
Total Produced Water = 4.65		bbls	

Incident ID NAPP223253782

Incident ID	NAPP2232537823
District RP	
Facility ID	
Application ID	

### Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)	
Did this release impact groundwater or surface water?	☐ Yes ⊠ No	
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No	
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No	
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No	
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No	
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No	
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No	
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No	
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No	
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No	
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No	
Did the release impact areas <b>not</b> 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.		
<ul> <li>Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.</li> <li>Field data</li> <li>Data table of soil contaminant concentration data</li> <li>Depth to water determination</li> <li>Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li> <li>Boring or excavation logs</li> <li>Photographs including date and GIS information</li> <li>Topographic/Aerial maps</li> </ul>		

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.

□ Laboratory data including chain of custody

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Facility ID		
Application ID		

regulations all operators are required to report and/or file certain public health or the environment. The acceptance of a C-141 repart failed to adequately investigate and remediate contamination that	release notifications and perform corrective actions for releases which may endanger port by the OCD does not relieve the operator of liability should their operations have at pose a threat to groundwater, surface water, human health or the environment. In experience of responsibility for compliance with any other federal, state, or local laws
Printed Name: _Garrett Green	Title: _Environmental Coordinator
Signature: Satt Sur	Date:02/08/2023
email: _garrett.green@exxonmobil.com	Telephone:575-200-0729
OCD Only	
Received by: <u>Jocelyn Harimon</u>	Date:02/08/2023

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Facility ID	
Application ID	

### Closure

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

Closure Report Attachment Checklist: Each of the following	g items must be included in the closure report.
A scaled site and sampling diagram as described in 19.15.29	9.11 NMAC
Photographs of the remediated site prior to backfill or photomust be notified 2 days prior to liner inspection)	os of the liner integrity if applicable (Note: appropriate OCD District office
☐ Laboratory analyses of final sampling (Note: appropriate Ol	DC District office must be notified 2 days prior to final sampling)
Description of remediation activities	
and regulations all operators are required to report and/or file cert may endanger public health or the environment. The acceptance is should their operations have failed to adequately investigate and rehuman health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regurestore, reclaim, and re-vegetate the impacted surface area to the accordance with 19.15.29.13 NMAC including notification to the Printed Name: _Garrett Green	
email:garrett.green@exxonmobil.com	Telephone:575-200-0729
OCD Only	
Received by:	Date:02/08/2023
	ty of liability should their operations have failed to adequately investigate and the water, human health, or the environment nor does not relieve the responsible d/or regulations.
Closure Approved by:	Date:
Printed Name:	Title:



February 8, 2023

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

Re: Closure Request

PLU 25 Brushy Draw 901H

**Incident Number NAPP2232537823** 

**Eddy County, New Mexico** 

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Closure Request* to document excavation and soil sampling activities completed to address impacted soil at the PLU 25 Brushy Draw 901H (Site). Soil was impacted by a release of crude oil and produced water onto the surface of the well pad. Based on excavation activities and analytical results from soil sampling events, XTO is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number NAPP2232537823.

#### SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit E, Section 25, Township 25 South, Range 30 East, in Eddy County, New Mexico (32.10185°, -103.84166°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

On November 10, 2022, corrosion on a 4-inch steel flowline resulted in the release of approximately 0.43 barrels (bbls) of crude oil and 5.69 bbls of produced water. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 0.35 bbls of crude oil and 4.65 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Release Notification Form C-141 (Form C-141) on November 18, 2022. The release was assigned Incident Number NAPP2232537823.

#### SITE CHARATERIZATION AND CLOSURE CRITERIA

The Site was characterized according to 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 4 of the Form C-141, Site Assessment/Characterization.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. On February 24, 2021, a soil boring permitted by the New Mexico Office of the State Engineer (NMOSE) under file number C-4498 was drilled 0.12 miles southeast of the Site utilizing a truck-mounted hollow-stem auger rig. Soil boring C-4498 was drilled to a depth of 109 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The borehole was

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 3122 National Parks Highway | Carlsbad, New Mexico 88220 | ensolum.com

XTO Energy, Inc. Closure Request PLU 25 Brushy Draw 901H

left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 109 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. The Well Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash approximately 640 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

#### SITE ASSESSMENT AND SAMPLING ACTIVITIES

On January 6, 2023, Ensolum personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Seven delineation soil samples (SS01 through SS07) were collected within and around the release extent at a depth of 0.5 feet bgs. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizaing 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 visit 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 contaminants of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil samples delivered to the laboratory the same day they were collected may not have equilabrated to 6 degrees Celcius required for shipment and long term storage, but are considered to have been received in acceptable condition by the laboratory.

Laboratory analytical results for delineation soil samples SS01 through SS03 and SS05, collected within the release extent, indicated TPH-GRO/TPH-DRO and/or TPH concentrations exceeded the Closure Criteria. Laboratory analytical results for delineation soil samples SS04, SS06, and SS07, collected around the release extent, indicated all COC concentrations were compliant with the Closure Criteria the strictest Table I Closure Criteria, confirming the lateral extent of the release. Laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C. Based on the laboratory analytical results, additional remediation activities appeared to be warranted.



XTO Energy, Inc. Closure Request PLU 25 Brushy Draw 901H

#### **EXCAVATION SOIL SAMPLING ACTIVITIES AND ANALYTICAL RESULTS**

On January 12 and 13, 2023, Ensolum personnel returned to the Site to oversee excavation activities. Upon arrival on Site, personnel noted a trench of flowlines ran underneath the release extent. Utilizing a hydrovac, the trench was spotted in three locations throughout the release extent, confirming a line depth of 4 feet bgs. Upon confirmation of line depth, excavation activities commenced. Impacted soil was excavated from the release area as indicated by visible staining and laboratory analytical results for the delineation soil samples. Excavation activities were performed using a track-mounted backhoe. To direct excavation activities, soil was screened for VOCs and chloride. The excavation was completed to a depth of 2 feet bgs. Photographic documentation of the excavation activities is included in Appendix B.

Following removal of impacted soil, 5-point composite soil samples were collected at least every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS07 were collected from the floor of the excavation at a depth of 2 feet bgs. Composite soil samples SW01 and SW02 were collected from the sidewalls of the excavation at depths ranging from ground surface to 2 feet bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 3.

The excavation area measured approximately 1,400 square feet. A total of approximately 104 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Carlsbad, New Mexico.

Laboratory analytical results for excavation floor samples FS01 through FS07 and sidewall samples SW01 and SW02 indicated all COC concentrations were compliant with the Closure Criteria and no further remediation was required. The laboratory analytical results are summarized on Table 1 and the complete laboratory analytical reports are included in Appendix C.

#### **CLOSURE REQUEST**

Site assessment and excavation activities were conducted at the Site to address the November 10, 2022 release of crude oil and produced water. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria. Based on soil sample laboratory analytical results, no further remediation is required. XTO will backfill the excavation with material purchased locally and recontour the Site to match preexisting site conditions. XTO believes remedial actions taken at the Site have been protective of human health, the environment, and groundwater. As such, XTO respectfully requests closure for Incident Number NAPP2232537823.



XTO Energy, Inc. Closure Request PLU 25 Brushy Draw 901H

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

Sincerely, **Ensolum, LLC** 

Meredith Roberts Field Geologist Ashley L. Ager, M.S., P.G.

Principal

cc: Garrett Green, XTO

Shelby Pennington, XTO Bureau of Land Management

### Appendices:

Figure 1 Site Receptor Map

Figure 2 Delineation Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Table 1 Soil Sample Analytical Results
Appendix A Referenced Well Records

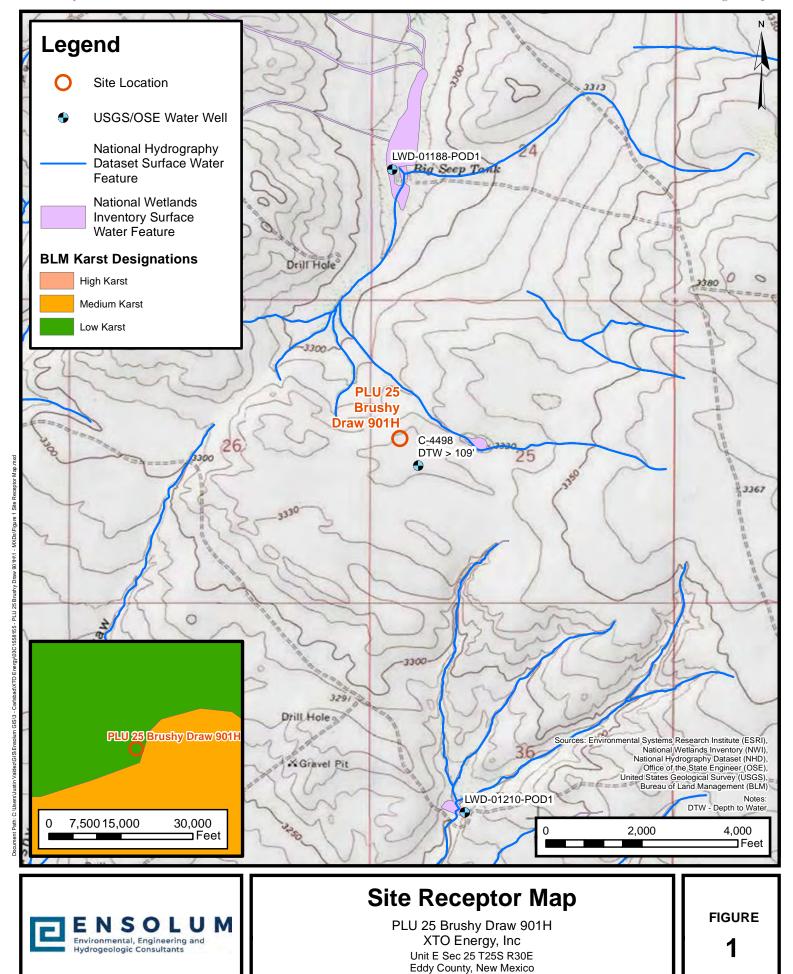
Appendix B Photographic Log

Appendix C Laboratory Analytical Reports & Chain-of-Custody Documentation

Appendix D NMOCD Notifications

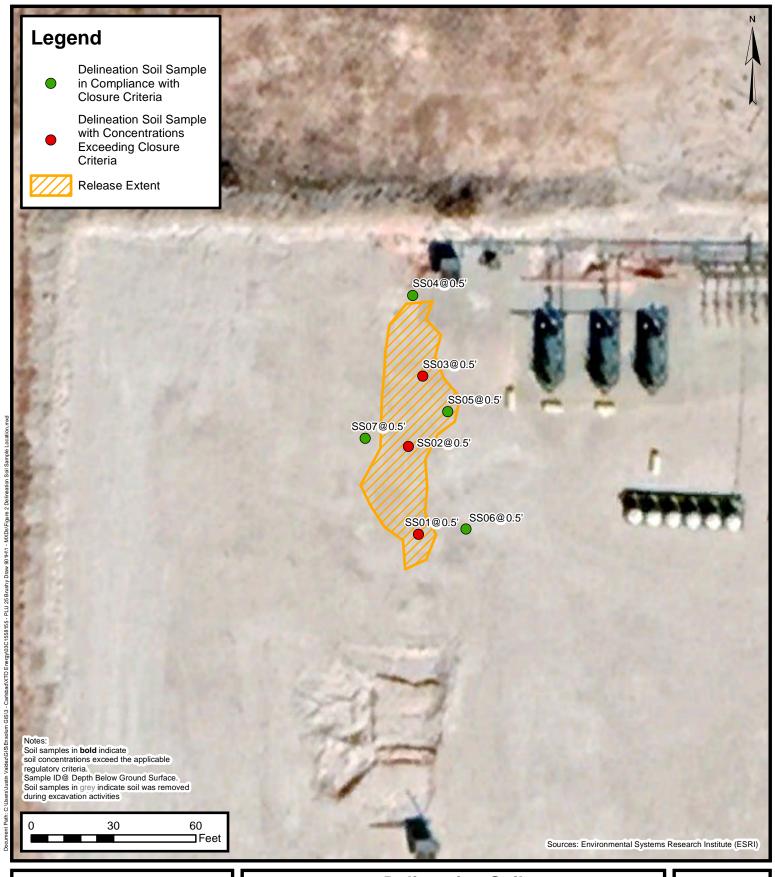


**FIGURES** 



Incident Number: NAPP2232537823

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# Delineation Soil Sample Locations

PLU 25 Brushy Draw 901H XTO Energy, Inc Unit E Sec 25 T25S R30E Eddy County, New Mexico Incident Number: NAPP2232537823 **FIGURE** 

2





# **Excavation Soil Sample Locations**

PLU 25 Brushy Draw 901H XTO Energy, Inc Unit E Sec 25 T25S R30E Eddy County, New Mexico Incident Number: NAPP2232537823 **FIGURE** 

3



**TABLES** 



# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 25 Brushy Draw 901H 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 C	losure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000		
Delineation Soil Samples												
SS01	01/06/2023	0.5	<0.00200	0.00826	245	7,450	<49.9	7,695	7,700	10,000		
<del>SS02</del>	01/06/2023	0.5	<0.00200	0.0164	451	<del>15,500</del>	<249	<del>15,951</del>	<del>16,000</del>	12,400		
<del>SS03</del>	01/06/2023	0.5	<0.00200	<del>&lt;0.00401</del>	<del>1,230</del>	8,000	<del>&lt;49.9</del>	9,230	9,230	8,990		
SS04	01/06/2023	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	321		
<del>\$\$05</del>	01/06/2023	0.5	<0.00199	<0.00398	<del>&lt;49.9</del>	<del>58.7</del>	<del>&lt;49.9</del>	<del>58.7</del>	<del>58.7</del>	670		
SS06	01/06/2023	0.5	<0.00198	<0.00396	<49.9	63.2	<49.9	63.2	63.2	549		
SS07	01/06/2023	0.5	<0.00200	<0.00401	<50.0	65.4	<50.0	65.4	65.4	253		
				Exc	avation Soil Sai	nples						
FS01	01/13/2023	2	<0.00200	<0.00401	<49.9	150	<49.9	150	150	2,140		
FS02	01/13/2023	2	<0.00199	0.00514	<50.0	214	51.6	214	266	1,390		
FS03	01/13/2023	2	<0.00199	<0.00398	<49.9	64	<49.9	64.0	64.0	4,110		
FS04	01/13/2023	2	<0.00200	< 0.00399	<49.9	73	<49.9	73.0	73.0	3,810		
FS05	01/13/2023	2	<0.00201	<0.00402	<50.0	97	<50.0	97.0	97.0	3,810		
FS06	01/13/2023	2	<0.00202	<0.00404	<50.0	118	<50.0	118	118	2,380		
FS07	01/13/2023	2	<0.00199	<0.00398	<49.9	191	<49.9	191	191	1,960		
SW01	01/13/2023	0-2	<0.00199	<0.00398	<49.9	119	<49.9	119	119	1,200		
SW02	01/13/2023	0-2	<0.00200	<0.00399	<50.0	101	<50.0	101	101	3,580		

#### 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

 $\ensuremath{\mathsf{Grey}}$  text indicates soil sample removed during excavation activities

Ensolum 1 of 1



**APPENDIX A** 

Referenced Well Records

WELL TAG ID NO.



	OSE POD NO.		.)		WELL TAG ID NO.			OSE FILE NO(	S).				
Z	POD1 (BH	<b>I-0</b> 1)			n/a			C-4498					
Ĭ	WELL OWNE	R NAME(S)						PHONE (OPTI	ONAL)				
ຽ	XTO Energ												
3	WELL OWNE							Courter C		000 4 0000			
ון וו	6401 Holida							CITY Midland		STATE TX	79707	ZIP	
M €	0401 1101104	ay 11m D	1.					Minimi		17	19101		
Ę	· WELL		DE	GREES	MINUTES	SECONI	os						
[V]	LOCATION	,   , ,	TITUDE	32°	6'	1.96	" N	* ACCURACY	REQUIRED: ONE TEN	REQUIRED: ONE TENTH OF A SECOND			
₽	(FROM GPS	a		-103°	50'	26.19		* DATUM REG	QUIRED: WGS 84				
GENERAL AND WELL LOCATION	,	LOI	NGITUDE	103	30	20.12	, w		-				
3	DESCRIPTIO	n relatin	IG WELL LOCATION TO	STREET ADD	RESS AND COMMON	LANDMA	RKS – PLS	S (SECTION, TO	WNSHJIP, RANGE) WH	ERE AVA	ILABLE		
-	NW SW N	3 Sec. 25	T25S R30E										
			<b>,</b>										
	LICENSE NO. 124	0	NAME OF LICENSED		Jackie D. Atkins				NAME OF WELL DR				
	124	·······			Jackie D. Aukins				Auxins Eng	meering	Associates, I	nc.	
	DRILLING ST		DRILLING ENDED		OMPLETED WELL (FI			LE DEPTH (FT)	DEPTH WATER FIR				
	02/24/2	2021	02/24/2021	tempo	rary well materia	1		109		n/a			
			·	_					STATIC WATER LEV	EL IN CO	MPLETED WE	LL (FT)	
7	COMPLETED	WELL IS:	ARTESIAN	✓ DRY HO	LE SHALLO	W (UNCON	FINED)			n/a			
DRILLING & CASING INFORMATION	DRILLING FL	IIID:	□ AIR	MUD	ADDITIV	ES – SPECI	FV.						
₹			Canada	Lenni					** **	<u> </u>			
N N	DRILLING MI	ETHOD:	ROTARY	НАММЕ	R CABLE TO	OOL	✓ OTHE	R – SPECIFY:	Holic	w Stem	Auger		
E	DEPTH (feet bgl) BORE HOLE			CASING	CASING MATERIAL AND/OR			CASING CAS		NG WALL			
3	DOKE HOLE		DIAM		1 LIKADE I		ASING NECTION	INSIDE DIAM.		NG WALL CKNESS	SLOT SIZE		
K			(inches)		each casing string,	and	T	YPE	(inches)		nches)	(inches)	
₹	0	109	±6.5	note	note sections of screen) (add coupling diame  Boring- HSA		ling diameter)		<u></u> `				
વ્ય	U	109	±0.5		Bornig- HSA						<del>-</del>		
Z													
								_					
~						i							
									USE DI MAR	11.20	21 pm4; 2F		
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	<u> </u>		<u>.l</u>	<u> </u>					1	<del></del>			
	DEPTH (	feet bgl)	BORE HOLE	L	IST ANNULAR SE	EAL MAT	ERIAL A	AND	AMOUNT		METHO		
ANNULAR MATERIAL	FROM	то	DIAM. (inches)	GRA	AVEL PACK SIZE-	RANGE	BY INTE	RVAL	(cubic feet)		PLACEM	MENT	
E													
AT				†									
<b>E</b>	<del>                                     </del>		<del> </del>								·		
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FOP	OSE INTERI	TALLISE						WR_2	0 WELL RECORD	 & T.OG <i>(</i>	Version 06/3	0/1 <b>7</b> )	
$\overline{}$	NO.	449	1 \$		POD NO	). 1		TRN		57	9		
<u> </u>	ATION		7 720	- ( R	30E Sec	,	<del>-                                    </del>	WELL TAG I	- 1/1		PAGE	1 OF 2	
ITAC													

	DEPTH (1	feet bgl)	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED INCLUDE WATER-BEARING CAVITIES OR FRACTURE 2 (attach supplemental sheets to fully describe all units)	ONES	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)	
	0	34	34	Caliche, tan, no odor, no stain, gravel, dry		Y √N		
	34	40	6	sand/ cacliche, tan, no odor, no stain, m-f grain, well sorted,	dry	Y √N		
.	40	56	16	sand, tan, no odor, no stain, m-f grain, well sorted, dry		y √n		
	56	72	16	sandstone, low consolidation, tan, no odor, no stain, m-f grain, well	sorted, dry	y √n		
	72	79	7	sand, tan, no odor, no stain, m-f grain, well sorted, dry		Y ✓N		
ų	79	109	30	sandstone, low - medium consolidation, tan, no odor, m-f grained, w	ell sorted, m	Y ✔N		
4 HYDROGEOLOGIC <del>log</del> of Well						Y N		
Q.						Y N		
9						Y N		
- <u>7</u>	·					Y N		
20						Y N		
95						Y N		
RO		-				Y N		
HA						Y N		
4						Y N		
						Y N		
						Y N		
						Y N		
						Y N		
						Y N		
						Y N		
	METHOD U	SED TO ES	TIMATE YIELD	OF WATER-BEARING STRATA:	тот	AL ESTIMATED		
	PUM	P A	IR LIFT	BAILER OTHER – SPECIFY:	WE:	LL YIELD (gpm):	0.00	
NO	WELL TES			ACH A COPY OF DATA COLLECTED DURING WELL TESTING ME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWI				
TEST; RIG SUPERVISION	MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface.  Logs adapted from WSP on-site geologist.							
5. TEST			RILL RIG SUPE	VISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL	CONSTRU	CTION OTHER TH	IAN LICENSEE:	
	Shane Eldri	age						
6. SIGNATURE	CORRECT	RECORD O	F THE ABOVE I	TIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS W 10 DAYS AFTER COMPLETION OF WELL DRILLING:				
6. SIGN	Jack k	Atkins		Jackie D. Atkins		03/11/2021		
		SIGNAT	URE OF DRILLE	R / PRINT SIGNEE NAME		DATE		
FOR	R OSE INTER	NAL USE		WR-20	WELL RE	CORD & LOG (Ve	rsion 06/30/2017)	
	E NO.	449	8	POD NO. TRN 1	, ,			
TO	CATION	177	The	R 30E C 25 Inmumor		1/4	PAGE 2 OF 2	

John R. D Antonio, Jr., P.E. State Engineer



koswell Office 1900 WEST SECOND STREET ROSWELL, NM 88201

#### STATE OF NEW MEXICO OFFICE OF THE STATE ENGINEER

Trn Nbr:

682528

File Nbr:

C 04498

Well File Nbr: C 04498 POD1

Mar. 11, 2021

TACOMA MORRISEY WSP USA 3300 NORTH A STREET BLDG 1 #222 MIDLAND, TX 79705

#### Greetings:

The above numbered permit was issued in your name on 12/01/2020.

The Well Record was received in this office on 03/11/2021, stating that it had been completed on 02/24/2021, and was a dry well. The well is to be plugged according to 19.27.4.30 NMAC.

Please note that another well can be drilled under this permit if the well is completed and the well log filed on or before 12/01/2021.

If you have any questions, please feel free to contact us.

Andrew Dennis (575) 622 - 6521

drywell

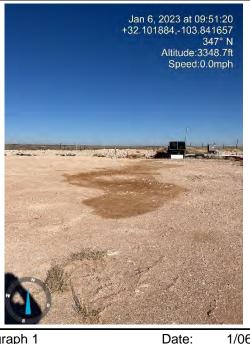


**APPENDIX B** 

Photographic Log



**Photographic Log** XTO Energy, Inc PLU 25 Brushy Draw 901H NAPP2232537823





Photograph 1 Description: Initial release extent

View: North

1/06/2023 Photograph 2

Date:

1/12/2023

Description: Flagged lines running underneath release

View: North





Photograph 3

Date:

1/12/2023 Photograph 4

Date:

1/13/2023

Description: Excavation; trenches for line spotting

View: North

View: North

Description: Completed excavation with berm



APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation

**Environment Testing** 

### **ANALYTICAL REPORT**

### PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701 Generated 1/13/2023 12:07:49 PM

### **JOB DESCRIPTION**

PLU 25 Brushy Draw 901H SDG NUMBER 03C1558155

### **JOB NUMBER**

890-3775-1

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 1/13/2023 12:07:49 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

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Client: Ensolum
Project/Site: PLU 25 Brushy Draw 901H
Laboratory Job ID: 890-3775-1
SDG: 03C1558155

## **Table of Contents**

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### **Definitions/Glossary**

Job ID: 890-3775-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

#### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

\*1 LCS/LCSD RPD exceeds control limits.

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1

SDG: 03C1558155

Job ID: 890-3775-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3775-1

#### Receipt

The samples were received on 1/6/2023 1:17 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 4.1°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-3775-1), SS02 (890-3775-2) and SS03 (890-3775-3).

#### **GC VOA**

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

#### GC Semi VOA

Method 8015MOD NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-43713 and analytical batch 880-43779 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD NM: Surrogate recovery for the following samples were outside control limits: SS01 (890-3775-1), SS02 (890-3775-2), SS03 (890-3775-3) and (MB 880-43713/1-A). Evidence of matrix interferences is not obvious.

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

#### HPLC/IC

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

Client: Ensolum

Job ID: 890-3775-1

Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Lab Sample ID: 890-3775-1

Date Collected: 01/06/23 10:35 Date Received: 01/06/23 13:17

**Client Sample ID: SS01** 

Matrix: Solid

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:11	1
Ethylbenzene	0.00826		0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/09/23 11:16	01/10/23 20:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:11	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/09/23 11:16	01/10/23 20:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130			01/09/23 11:16	01/10/23 20:11	1
1,4-Difluorobenzene (Surr)	89		70 - 130			01/09/23 11:16	01/10/23 20:11	1
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	ulation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00826		0.00400	mg/Kg			01/11/23 10:30	1
Method: SW846 8015 NM - Diese		ics (DRO) (0		99			0.7.1720 10.00	
Method: SW846 8015 NM - Diese Analyte	el Range Organ Result	ics (DRO) ((	GC)	Unit	D	Prepared	Analyzed	
Method: SW846 8015 NM - Diese	el Range Organ		GC)		<u>D</u>	Prepared		Dil Fac
Method: SW846 8015 NM - Diese Analyte	Result 7700	Qualifier	RL 49.9	Unit	<u>D</u>	Prepared	Analyzed	
Method: SW846 8015 NM - Diese Analyte Total TPH	Range Organ Result 7700 sel Range Orga	Qualifier	RL 49.9	Unit	D	Prepared Prepared	Analyzed	1
Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies	Range Organ Result 7700 sel Range Orga	Qualifier nics (DRO)	RL 49.9 (GC)	Unit mg/Kg	=	· · · · · · · · · · · · · · · · · · ·	Analyzed 01/13/23 12:46	1
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics	el Range Organ Result 7700 sel Range Orga Result	Qualifier  nics (DRO)  Qualifier	RL 49.9 (GC)	Unit mg/Kg	=	Prepared	Analyzed 01/13/23 12:46 Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Pl Range Organ Result 7700 Sel Range Orga Result 245	Qualifier  nics (DRO) Qualifier  *1	(GC)  RL  49.9  (BC)  RL  49.9	Unit mg/Kg  Unit mg/Kg	=	Prepared 01/11/23 09:47	Analyzed 01/13/23 12:46  Analyzed 01/13/23 04:07	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	el Range Organ Result 7700 sel Range Orga Result 245 7450	Qualifier  nics (DRO) Qualifier  *1	(GC)  RL  49.9  (GC)  RL  49.9  49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg	=	Prepared 01/11/23 09:47 01/11/23 09:47	Analyzed 01/13/23 12:46  Analyzed 01/13/23 04:07 01/13/23 04:07	1 Dil Fac 1 1
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	el Range Organ Result 7700 sel Range Orga Result 245 7450 <49.9	Qualifier  nics (DRO) Qualifier  *1	GC) RL 49.9  (GC) RL 49.9  49.9  49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg	=	Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47	Analyzed 01/13/23 12:46  Analyzed 01/13/23 04:07 01/13/23 04:07	Dil Fac  1  1  Dil Fac  Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	el Range Organ Result 7700 sel Range Orga Result 245 7450 <49.9 %Recovery 106	Qualifier  nics (DRO) Qualifier  *1	GC) RL 49.9  (GC) RL 49.9  49.9  49.9  Limits	Unit mg/Kg  Unit mg/Kg  mg/Kg	=	Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47 Prepared	Analyzed 01/13/23 12:46  Analyzed 01/13/23 04:07 01/13/23 04:07 01/13/23 04:07  Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	el Range Organ Result 7700 sel Range Orga Result 245 7450 <49.9 %Recovery 106 185	Qualifier  nics (DRO) Qualifier  *1  U  Qualifier  \$1+	GC)  RL 49.9  (GC)  RL 49.9  49.9  49.9  Limits 70 - 130 70 - 130	Unit mg/Kg  Unit mg/Kg  mg/Kg	=	Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47  Prepared 01/11/23 09:47	Analyzed 01/13/23 12:46  Analyzed 01/13/23 04:07 01/13/23 04:07  Analyzed 01/13/23 04:07	1 Dil Fac 1 1
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result 7700 sel Range Organ Result 245 7450 <49.9  %Recovery 106 185 s, lon Chromato	Qualifier  nics (DRO) Qualifier  *1  U  Qualifier  \$1+	GC)  RL 49.9  (GC)  RL 49.9  49.9  49.9  Limits 70 - 130 70 - 130	Unit mg/Kg  Unit mg/Kg  mg/Kg	=	Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47  Prepared 01/11/23 09:47	Analyzed 01/13/23 12:46  Analyzed 01/13/23 04:07 01/13/23 04:07  Analyzed 01/13/23 04:07	1 1 1 Dil Fac 1

**Client Sample ID: SS02** Lab Sample ID: 890-3775-2

Date Collected: 01/06/23 10:40 Date Received: 01/06/23 13:17

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:32	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:32	1
Ethylbenzene	0.00480		0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:32	1
m-Xylene & p-Xylene	0.0116		0.00399	mg/Kg		01/09/23 11:16	01/10/23 20:32	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:32	1
Xylenes, Total	0.0116		0.00399	mg/Kg		01/09/23 11:16	01/10/23 20:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130			01/09/23 11:16	01/10/23 20:32	1

**Eurofins Carlsbad** 

**Matrix: Solid** 

Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H Job ID: 890-3775-1

SDG: 03C1558155

**Client Sample ID: SS02** Lab Sample ID: 890-3775-2 Date Collected: 01/06/23 10:40

Matrix: Solid

Date Received: 01/06/23 13:17 Sample Depth: 0.5'

Method: SW846 8021B - Volatile	<b>Organic Compounds</b>	(GC) (Continued)
--------------------------------	--------------------------	------------------

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	75	70 - 130	01/09/23 11:16	01/10/23 20:32	1

Method: TAL SOP Total BTEX - Total BTEX Calculation									
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Total BTEX	0.0164	0.00399	mg/Kg			01/11/23 10:30	1		

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)								
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	16000	249	mg/Kg			01/13/23 12:46	1	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	451		249	mg/Kg		01/11/23 09:47	01/13/23 04:29	5
Diesel Range Organics (Over C10-C28)	15500	*1	249	mg/Kg		01/11/23 09:47	01/13/23 04:29	5
Oll Range Organics (Over C28-C36)	<249	U	249	mg/Kg		01/11/23 09:47	01/13/23 04:29	5

	Surrogate	%Recovery	Qualifier	Limits	Prepa	ared	Analyzed	Dil Fac
	1-Chlorooctane	73		70 - 130	01/11/23	3 09:47	01/13/23 04:29	5
	o-Terphenyl	399	S1+	70 - 130	01/11/23	3 09:47	01/13/23 04:29	5
Ì								

### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12400	99.0	mg/Kg			01/10/23 14:52	20

**Client Sample ID: SS03** Lab Sample ID: 890-3775-3 **Matrix: Solid** 

Date Collected: 01/06/23 10:45 Date Received: 01/06/23 13:17

Sample Depth: 0.5'

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

Welliou. Syvo40 602 IB - Voial	ne Organic Comp	ounus (GC)	)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:52	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:52	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		01/09/23 11:16	01/10/23 20:52	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 20:52	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		01/09/23 11:16	01/10/23 20:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			01/09/23 11:16	01/10/23 20:52	1
1 4-Difluorobenzene (Surr)	104		70 - 130			01/09/23 11:16	01/10/23 20:52	1

4-Bromofluorobenzer	ne (Surr)	103	70 - 130	01/09/23 11:	16 01/10/23 20:52	
1,4-Difluorobenzene	(Surr)	104	70 - 130	01/09/23 11:	16 01/10/23 20:52	1
_						

wetnoa:	IAL SUP	iotai BiEX -	lotal B I E X	Calculation

	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
l	Total BTEX	<0.00401	U	0.00401	mg/Kg			01/11/23 10:30	1

Method: SW846 8015 NM - Diesel Range Organics	(DRO)	(GC)	
motifical offoto of to this Dicool Rungo Organico	10.10/	100,	,

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	9230	250	mg/Kg			01/13/23 12:46	1

Matrix: Solid

Lab Sample ID: 890-3775-3

### **Client Sample Results**

 Client: Ensolum
 Job ID: 890-3775-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Client Sample ID: SS03

Date Collected: 01/06/23 10:45 Date Received: 01/06/23 13:17

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1230		49.9	mg/Kg		01/11/23 09:47	01/13/23 04:52	1
Diesel Range Organics (Over C10-C28)	8000	*1	250	mg/Kg		01/11/23 09:47	01/13/23 07:05	5
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/11/23 09:47	01/13/23 04:52	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130			01/11/23 09:47	01/13/23 04:52	1
1-Chlorooctane	86		70 - 130			01/11/23 09:47	01/13/23 07:05	5
o-Terphenyl	193	S1+	70 - 130			01/11/23 09:47	01/13/23 04:52	1
o-Terphenyl	201	S1+	70 - 130			01/11/23 09:47	01/13/23 07:05	5
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8990		50.0	mg/Kg			01/10/23 14:57	10

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### **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-3775-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-23405-A-1-A MS	Matrix Spike	112	99	
880-23405-A-1-B MSD	Matrix Spike Duplicate	102	107	
890-3775-1	SS01	92	89	
890-3775-2	SS02	82	75	
390-3775-3	SS03	103	104	
_CS 880-43514/1-A	Lab Control Sample	104	109	
_CSD 880-43514/2-A	Lab Control Sample Dup	103	106	
MB 880-43514/5-A	Method Blank	100	105	
Surrogate Legend				

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
90-3775-1	SS01	106	185 S1+	
90-3775-2	SS02	73	399 S1+	
90-3775-3	SS03	95	193 S1+	
90-3775-3	SS03	86	201 S1+	
90-3781-A-21-D MS	Matrix Spike	87	82	
90-3781-A-21-E MSD	Matrix Spike Duplicate	105	94	
CS 880-43713/2-A	Lab Control Sample	125	108	
CSD 880-43713/3-A	Lab Control Sample Dup	101	85	
MB 880-43713/1-A	Method Blank	140 S1+	123	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3775-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-43514/5-A

Lab Sample ID: LCS 880-43514/1-A

**Matrix: Solid** 

Analysis Batch: 43599

**Matrix: Solid** Analysis Batch: 43599 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43514

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/09/23 11:16	01/10/23 12:50	1

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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	01/09/23 11:16	01/10/23 12:50	1
1,4-Difluorobenzene (Surr)	105		70 - 130	01/09/23 11:16	01/10/23 12:50	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 43514

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1049		mg/Kg		105	70 - 130	
Toluene	0.100	0.1007		mg/Kg		101	70 - 130	
Ethylbenzene	0.100	0.09799		mg/Kg		98	70 - 130	
m-Xylene & p-Xylene	0.200	0.2008		mg/Kg		100	70 - 130	
o-Xylene	0.100	0.09693		mg/Kg		97	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	109	70 - 130

Lab Sample ID: LCSD 880-43514/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

Analysis Batch: 43599

Prep Type: Total/NA Prep Batch: 43514

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1036		mg/Kg		104	70 - 130	1	35
Toluene	0.100	0.09817		mg/Kg		98	70 - 130	3	35
Ethylbenzene	0.100	0.09733		mg/Kg		97	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2012		mg/Kg		101	70 - 130	0	35
o-Xylene	0.100	0.09640		mg/Kg		96	70 - 130	1	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	103	70 - 130
1,4-Difluorobenzene (Surr)	106	70 - 130

Lab Sample ID: 880-23405-A-1-A MS

**Matrix: Solid** 

Analysis Batch: 43599

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

Prep Batch: 43514

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00202	U F1	0.0996	0.06305	F1	mg/Kg	_	63	70 - 130	
Toluene	<0.00202	U F1	0.0996	0.06776	F1	mg/Kg		68	70 - 130	

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1 SDG: 03C1558155

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

Lab Sample ID: 880-23405-A-1-A MS

**Matrix: Solid** 

Analysis Batch: 43599

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 43514

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00202	U	0.0996	0.07235		mg/Kg		73	70 - 130	
m-Xylene & p-Xylene	<0.00403	U	0.199	0.1515		mg/Kg		76	70 - 130	
o-Xylene	<0.00202	U	0.0996	0.07547		mg/Kg		75	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	112		70 - 130		
1,4-Difluorobenzene (Surr)	99		70 - 130		

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 43514

**Matrix: Solid** Analysis Batch: 43599

Lab Sample ID: 880-23405-A-1-B MSD

Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits 0.0990 Benzene <0.00202 UF1 0.07917 mg/Kg 80 70 - 130 23 35 Toluene 0.07562 <0.00202 UF1 0.0990 mg/Kg 76 70 - 130 11 35 Ethylbenzene <0.00202 U 0.0990 0.07569 mg/Kg 76 70 - 130 5 35 <0.00403 U 0.198 70 - 130 35 m-Xylene & p-Xylene 0.1576 mg/Kg 80 4 0.0990 <0.00202 U 0.07736 78 70 - 130 2 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

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

Lab Sample ID: MB 880-43713/1-A

**Matrix: Solid** 

Analysis Batch: 43779

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43713

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	140	S1+	70 - 130	01/11/23 09:47	01/12/23 19:44	1
o-Terphenyl	123		70 - 130	01/11/23 09:47	01/12/23 19:44	1

Lab Sample ID: LCS 880-43713/2-A

**Matrix: Solid** 

**Analysis Batch: 43779** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 43713

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	1063		mg/Kg		106	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1036		mg/Kg		104	70 - 130	
C10-C28)								

Job ID: 890-3775-1

SDG: 03C1558155

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

Lab Sample ID: LCS 880-43713/2-A

Lab Sample ID: LCSD 880-43713/3-A

Project/Site: PLU 25 Brushy Draw 901H

**Matrix: Solid** 

Client: Ensolum

**Analysis Batch: 43779** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43713

LCS LCS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 125 70 - 130 o-Terphenyl 108 70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 43713

**Matrix: Solid** Analysis Batch: 43779 Prep Batch: 43713 Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit

1000 978.4 98 70 - 1308 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 766.4 \*1 77 mg/Kg 70 - 13030 20

C10-C28)

LCSD LCSD

Sample Sample

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-3781-A-21-D MS Client Sample ID: Matrix Spike Prep Type: Total/NA

MS MS

**Matrix: Solid** 

**Analysis Batch: 43779** 

Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <50.0 U 998 927.5 mg/Kg 89 70 - 130

Spike

(GRO)-C6-C10 <50.0 U \*1 Diesel Range Organics (Over 998 862.9 mg/Kg 86 70 - 130

C10-C28)

MS MS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	87	70 - 130
o-Terphenyl	82	70 - 130

Lab Sample ID: 890-3781-A-21-E MSD Client Sample ID: Matrix Spike Duplicate

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

Analysis Batch: 43779 Prep Batch: 43713 MSD MSD RPD %Rec

Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline Range Organics <50.0 U 997 1064 103 mg/Kg 70 - 130 14 20 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U \*1 997 993.4 mg/Kg 100 70 - 130 14 20

C10-C28)

MSD MSD

Surrogate	%Recovery Qualifie	r Limits
1-Chlorooctane	105	70 - 130
o-Terphenyl	94	70 - 130

Client: Ensolum

Job ID: 890-3775-1

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

SDG: 03C1558155

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43541/1-A

Project/Site: PLU 25 Brushy Draw 901H

**Matrix: Solid** 

Analysis Batch: 43614

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Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 01/10/23 12:53

Lab Sample ID: LCS 880-43541/2-A

**Matrix: Solid** 

Analysis Batch: 43614

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 249.6 mg/Kg 100 90 - 110

Lab Sample ID: LCSD 880-43541/3-A

**Matrix: Solid** 

Analysis Batch: 43614

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 249.7 mg/Kg 100 90 - 110

Lab Sample ID: 890-3774-A-2-C MS

**Matrix: Solid** 

Analysis Batch: 43614

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added %Rec Result Qualifier Unit Limits 825.5 Chloride 550 250 110 90 - 110 mg/Kg

Lab Sample ID: 890-3774-A-2-D MSD

**Matrix: Solid** 

Analysis Batch: 43614

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 550 799.5 mg/Kg 100 90 - 110 20

### **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1 SDG: 03C1558155

### **GC VOA**

### Prep Batch: 43514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Total/NA	Solid	5035	
890-3775-2	SS02	Total/NA	Solid	5035	
890-3775-3	SS03	Total/NA	Solid	5035	
MB 880-43514/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43514/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43514/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23405-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-23405-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 43599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Total/NA	Solid	8021B	43514
890-3775-2	SS02	Total/NA	Solid	8021B	43514
890-3775-3	SS03	Total/NA	Solid	8021B	43514
MB 880-43514/5-A	Method Blank	Total/NA	Solid	8021B	43514
LCS 880-43514/1-A	Lab Control Sample	Total/NA	Solid	8021B	43514
LCSD 880-43514/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43514
880-23405-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	43514
880-23405-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	43514

### Analysis Batch: 43727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Total/NA	Solid	Total BTEX	
890-3775-2	SS02	Total/NA	Solid	Total BTEX	
890-3775-3	SS03	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

### Prep Batch: 43713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Total/NA	Solid	8015NM Prep	
890-3775-2	SS02	Total/NA	Solid	8015NM Prep	
890-3775-3	SS03	Total/NA	Solid	8015NM Prep	
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 43779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Total/NA	Solid	8015B NM	43713
890-3775-2	SS02	Total/NA	Solid	8015B NM	43713
890-3775-3	SS03	Total/NA	Solid	8015B NM	43713
890-3775-3	SS03	Total/NA	Solid	8015B NM	43713
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015B NM	43713
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43713
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43713
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43713
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43713

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# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1 SDG: 03C1558155

### GC Semi VOA

### Analysis Batch: 43897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Total/NA	Solid	8015 NM	
890-3775-2	SS02	Total/NA	Solid	8015 NM	
890-3775-3	SS03	Total/NA	Solid	8015 NM	

### **HPLC/IC**

### Leach Batch: 43541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Soluble	Solid	DI Leach	
890-3775-2	SS02	Soluble	Solid	DI Leach	
890-3775-3	SS03	Soluble	Solid	DI Leach	
MB 880-43541/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 43614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3775-1	SS01	Soluble	Solid	300.0	43541
890-3775-2	SS02	Soluble	Solid	300.0	43541
890-3775-3	SS03	Soluble	Solid	300.0	43541
MB 880-43541/1-A	Method Blank	Soluble	Solid	300.0	43541
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	300.0	43541
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43541
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	43541
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	43541

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Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1 SDG: 03C1558155

Lab Sample ID: 890-3775-1

Matrix: Solid

**Client Sample ID: SS01** Date Collected: 01/06/23 10:35 Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	43514	01/09/23 11:16	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43599	01/10/23 20:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43727	01/11/23 10:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			43897	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43779	01/13/23 04:07	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	43541	01/09/23 12:54	KS	EET MID
Soluble	Analysis	300.0		10			43614	01/10/23 14:47	CH	EET MID

**Client Sample ID: SS02** Lab Sample ID: 890-3775-2 Matrix: Solid

Date Collected: 01/06/23 10:40 Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	43514	01/09/23 11:16	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43599	01/10/23 20:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43727	01/11/23 10:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			43897	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	43779	01/13/23 04:29	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	43541	01/09/23 12:54	KS	EET MID
Soluble	Analysis	300.0		20			43614	01/10/23 14:52	CH	EET MID

**Client Sample ID: SS03** Lab Sample ID: 890-3775-3

Date Collected: 01/06/23 10:45 Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	43514	01/09/23 11:16	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43599	01/10/23 20:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43727	01/11/23 10:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			43897	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43779	01/13/23 04:52	AJ	EET MIC
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	43779	01/13/23 07:05	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	43541	01/09/23 12:54	KS	EET MIC
Soluble	Analysis	300.0		10			43614	01/10/23 14:57	CH	EET MID

Laboratory References:

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

**Eurofins Carlsbad** 

**Matrix: Solid** 

### **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-3775-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

### **Laboratory: Eurofins Midland**

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

Authority Texas		ogram	Identification Number	<b>Expiration Date</b>
		ELAP	T104704400-22-25	06-30-23
The following analytes the agency does not of	• •	it the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes fo
Analysis Method	Prep Method	Matrix	Analyte	
8015 NM		Solid	Total TPH	

### **Method Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1

SDG: 03C1558155

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

### **Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

### Laboratory References:

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

### **Sample Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3775-1

SDG: 03C1558155

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3775-1	SS01	Solid	01/06/23 10:35	01/06/23 13:17	0.5'
890-3775-2	SS02	Solid	01/06/23 10:40	01/06/23 13:17	0.5'
890-3775-3	SS03	Solid	01/06/23 10:45	01/06/23 13:17	0.5'

# Chain of Custody

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Reacon   Marco   Triangle   Tri		onditions control usly negotiated.	nd subcontractors. It assigns standard terms and co t if such losses are due to circumstances beyond the nalyzed. These terms will be enforced unless previou	fins Xenco, its affiliates ar ses incurred by the client urofins Xenco, but not ar	der from client company to Euro onsibility for any losses or exper s for each sample submitted to I	amples constitutes a valid purchase or amples and shall not assume any resp lied to each project and a charge of \$:	ument and relinquishment of sa vill be liable only for the cost of sa um charge of \$85.00 will be appli	otice: Signature of this do service. Eurofins Xenco v Eurofins Xenco. A minim
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### **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 890-3775-1

 SDG Number: 03C1558155

Login Number: 3775 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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	

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### **Login Sample Receipt Checklist**

Client: Ensolum Job N

Job Number: 890-3775-1 SDG Number: 03C1558155

List Source: Eurofins Midland
List Number: 2
List Creation: 01/09/23 08:26 AM

Creator: Rodriguez, Leticia

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	N/A	

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<6mm (1/4").

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701 Generated 1/13/2023 12:07:49 PM

# **JOB DESCRIPTION**

PLU 25 Brushy Draw 901H SDG NUMBER 03C1558155

## **JOB NUMBER**

890-3776-1

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 1/13/2023 12:07:49 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

Page 2 of 20

Client: Ensolum Laboratory Job ID: 890-3776-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

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### **Definitions/Glossary**

Job ID: 890-3776-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

\*1 LCS/LCSD RPD exceeds control limits.

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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" Minimum Detectable Activity (Radiochemistry) MDA MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit Minimum Level (Dioxin) ML MPN Most Probable Number Method Quantitation Limit MQL

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)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) TEQ Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3776-1

SDG: 03C1558155

Job ID: 890-3776-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3776-1

### Receipt

The sample was received on 1/6/2023 1:17 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: SS06 (890-3776-1).

### **GC VOA**

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

### GC Semi VOA

Method 8015MOD\_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-43713 and analytical batch 880-43779 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: (MB 880-43713/1-A). Evidence of matrix interferences is not obvious.

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

### 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 Job ID: 890-3776-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Lab Sample ID: 890-3776-1 **Client Sample ID: SS06** Date Collected: 01/06/23 10:15

Matrix: Solid

Date Received: 01/06/23 13:17 Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		01/10/23 15:19	01/11/23 11:32	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/10/23 15:19	01/11/23 11:32	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/10/23 15:19	01/11/23 11:32	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		01/10/23 15:19	01/11/23 11:32	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/10/23 15:19	01/11/23 11:32	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		01/10/23 15:19	01/11/23 11:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			01/10/23 15:19	01/11/23 11:32	1
1,4-Difluorobenzene (Surr)	94		70 - 130			01/10/23 15:19	01/11/23 11:32	1
Method: TAL SOP Total BTEX - T	otal BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			01/11/23 13:19	1
Method: SW846 8015 NM - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	63.2		49.9	mg/Kg			01/13/23 12:46	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (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		01/11/23 09:47	01/12/23 22:59	1
Diesel Range Organics (Over C10-C28)	63.2	*1	49.9	mg/Kg		01/11/23 09:47	01/12/23 22:59	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/11/23 09:47	01/12/23 22:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130			01/11/23 09:47	01/12/23 22:59	1
o-Terphenyl	92		70 - 130			01/11/23 09:47	01/12/23 22:59	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	549		4.99	mg/Kg			01/10/23 15:02	1

### **Surrogate Summary**

Job ID: 890-3776-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Re
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3776-1	SS06	117	94	
890-3776-1 MS	SS06	99	98	
890-3776-1 MSD	SS06	91	101	
LCS 880-43675/1-A	Lab Control Sample	89	104	
LCSD 880-43675/2-A	Lab Control Sample Dup	92	101	
MB 880-43675/5-A	Method Blank	86	94	
Surrogate Legend				
BFB = 4-Bromofluorobenz	ene (Surr)			
DFBZ = 1,4-Difluorobenze	ene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3776-1	SS06	94	92
890-3781-A-21-D MS	Matrix Spike	87	82
890-3781-A-21-E MSD	Matrix Spike Duplicate	105	94
LCS 880-43713/2-A	Lab Control Sample	125	108
LCSD 880-43713/3-A	Lab Control Sample Dup	101	85
MB 880-43713/1-A	Method Blank	140 S1+	123

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3776-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

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

Lab Sample ID: MB 880-43675/5-A

Lab Sample ID: LCS 880-43675/1-A

**Matrix: Solid** Analysis Batch: 43697 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43675

	INID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/10/23 15:19	01/11/23 11:10	1

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	1	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	01/	/10/23 15:19	01/11/23 11:10	1
1,4-Difluorobenzene (Surr)	94		70 - 130	01/	/10/23 15:19	01/11/23 11:10	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43675

Analysis Batch: 43697 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1055 mg/Kg 106 70 - 130 Toluene 0.100 0.1010 mg/Kg 101 70 - 130 0.100 0.08629 Ethylbenzene mg/Kg 86 70 - 130 0.200 89 70 - 130 m-Xylene & p-Xylene 0.1771 mg/Kg 0.100 0.1024 70 - 130 o-Xylene mg/Kg 102

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 43697

Lab Sample ID: LCSD 880-43675/2-A

Prep Type: Total/NA Prep Batch: 43675

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09843		mg/Kg		98	70 - 130	7	35
Toluene	0.100	0.09734		mg/Kg		97	70 - 130	4	35
Ethylbenzene	0.100	0.08392		mg/Kg		84	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1750		mg/Kg		88	70 - 130	1	35
o-Xylene	0.100	0.09879		mg/Kg		99	70 - 130	4	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1.4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 890-3776-1 MS

**Matrix: Solid** 

Analysis Batch: 43697

Client Sample ID: SS06 Prep Type: Total/NA

Prep Batch: 43675

•	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00198	U	0.0998	0.09320		mg/Kg		93	70 - 130
Toluene	<0.00198	U	0.0998	0.09451		mg/Kg		95	70 - 130

### QC Sample Results

Client: Ensolum Job ID: 890-3776-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

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

Lab Sample ID: 890-3776-1 MS Client Sample ID: SS06 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 43697 Prep Batch: 43675

Sample	Sample	Spike	MS	MS				%Rec	
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
<0.00198	U	0.0998	0.08225		mg/Kg		82	70 - 130	
<0.00396	U	0.200	0.1716		mg/Kg		86	70 - 130	
<0.00198	U	0.0998	0.09664		mg/Kg		97	70 - 130	
	Result <0.00198 <0.00396	Result Qualifier <0.00198 U	Result         Qualifier         Added           <0.00198	Result         Qualifier         Added         Result           <0.00198	Result         Qualifier         Added         Result         Qualifier           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit         D           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits           <0.00198

MS MS Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 99 1,4-Difluorobenzene (Surr) 98 70 - 130

Lab Sample ID: 890-3776-1 MSD

**Matrix: Solid** 

								Prep	Batch:	43675
Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
<0.00198	U	0.101	0.09630		mg/Kg		96	70 - 130	3	35
<0.00198	U	0.101	0.09074		mg/Kg		90	70 - 130	4	35
<0.00198	U	0.101	0.07746		mg/Kg		77	70 - 130	6	35
<0.00396	U	0.202	0.1595		mg/Kg		79	70 - 130	7	35
<0.00198	U	0.101	0.08869		mg/Kg		88	70 - 130	9	35
	Result <0.00198 <0.00198 <0.00198 <0.00396	Sample         Sample           Result         Qualifier           <0.00198	Result         Qualifier         Added           <0.00198	Result         Qualifier         Added         Result           <0.00198	Result         Qualifier         Added         Result         Qualifier           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit         D           <0.00198	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           <0.00198	Sample Result Result Qualifier         Spike Added Sesult Qualifier         MSD Unit Qualifier         MSD VMSD VMSD VMSD VMSD VMSD VMSD VMSD V	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           <0.00198

MSD MSD Surrogate Qualifier Limits %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 91 1,4-Difluorobenzene (Surr) 101 70 - 130

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

Lab Sample ID: MB 880-43713/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA Prep Batch: 43713

Analysis Batch: 43779

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1

MB MB Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed 70 - 130 1-Chlorooctane 140 S1+ 01/11/23 09:47 01/12/23 19:44 70 - 130 o-Terphenyl 123 01/11/23 09:47 01/12/23 19:44

**Client Sample ID: Lab Control Sample** Lab Sample ID: LCS 880-43713/2-A **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 43779** Prep Batch: 43713

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	1063		mg/Kg		106	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1036		mg/Kg		104	70 - 130	
C10-C28)								

**Eurofins Carlsbad** 

**Client Sample ID: SS06** 

Prep Type: Total/NA

Client: Ensolum

Job ID: 890-3776-1

SDG: 03C1558155

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

Lab Sample ID: LCS 880-43713/2-A

Project/Site: PLU 25 Brushy Draw 901H

**Matrix: Solid** 

Analysis Batch: 43779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 43713

LCS LCS

%Recovery Qualifier Surrogate Limits 1-Chlorooctane 125 70 - 130 o-Terphenyl 108 70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 43713

Lab Sample ID: LCSD 880-43713/3-A

**Matrix: Solid** 

Analysis Batch: 43779

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	978.4		mg/Kg		98	70 - 130	8	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	766.4	*1	mg/Kg		77	70 - 130	30	20	

C10-C28)

LCSD LCSD

Sample Sample

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-3781-A-21-D MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 43779** 

Prep Type: Total/NA

Prep Batch: 43713

	Sample	Sample	Spike	IVIO	IVIO				/ortec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	927.5		mg/Kg		89	70 - 130	
Diesel Range Organics (Over	<50.0	U *1	998	862.9		mg/Kg		86	70 - 130	

C10-C28)

	MS MS	
Surrogate	%Recovery Qualifi	er Limits
1-Chlorooctane	87	70 - 130
o-Terphenyl	82	70 - 130

Lab Sample ID: 890-3781-A-21-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 43779

Chefft Samp	ie ib. Matrix Spike Duplicate
	Prep Type: Total/NA

Prep Batch: 43713

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	<50.0	U	997	1064		mg/Kg		103	70 - 130	14	20	
(GRO)-C6-C10												
Diesel Range Organics (Over	<50.0	U *1	997	993.4		mg/Kg		100	70 - 130	14	20	
C10 C28)												

C10-C28)

MSD	MSD
พอบ	พอบ

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	94		70 - 130

Client: Ensolum

Job ID: 890-3776-1

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

SDG: 03C1558155

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43541/1-A

Project/Site: PLU 25 Brushy Draw 901H

Matrix: Solid

Analysis Batch: 43614

MB MB

 Analyte
 Result Chloride
 Qualifier
 RL Unit
 Unit mg/Kg
 D Prepared
 Analyzed O1/10/23 12:53
 Dil Fac O1/10/23 12:53

Lab Sample ID: LCS 880-43541/2-A

Matrix: Solid

Analysis Batch: 43614

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 249.6 mg/Kg 100 90 - 110

Lab Sample ID: LCSD 880-43541/3-A

Matrix: Solid

Analysis Batch: 43614

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 249.7 mg/Kg 100 90 - 110

Lab Sample ID: 890-3774-A-2-C MS

Matrix: Solid

Analysis Batch: 43614

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added %Rec Result Qualifier Unit Limits 825.5 Chloride 550 250 110 90 - 110 mg/Kg

Lab Sample ID: 890-3774-A-2-D MSD

Matrix: Solid

Analysis Batch: 43614

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 250 Chloride 550 799.5 mg/Kg 100 90 - 110 20

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### **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3776-1

SDG: 03C1558155

### **GC VOA**

### Prep Batch: 43675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Total/NA	Solid	5035	
MB 880-43675/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43675/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43675/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3776-1 MS	SS06	Total/NA	Solid	5035	
890-3776-1 MSD	SS06	Total/NA	Solid	5035	

### Analysis Batch: 43697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Total/NA	Solid	8021B	43675
MB 880-43675/5-A	Method Blank	Total/NA	Solid	8021B	43675
LCS 880-43675/1-A	Lab Control Sample	Total/NA	Solid	8021B	43675
LCSD 880-43675/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43675
890-3776-1 MS	SS06	Total/NA	Solid	8021B	43675
890-3776-1 MSD	SS06	Total/NA	Solid	8021B	43675

### Analysis Batch: 43741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

### Prep Batch: 43713

<b>Lab Sample ID</b> 890-3776-1	Client Sample ID SS06	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 43779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Total/NA	Solid	8015B NM	43713
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015B NM	43713
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43713
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43713
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43713
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43713

### Analysis Batch: 43892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Total/NA	Solid	8015 NM	

### HPLC/IC

### Leach Batch: 43541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Soluble	Solid	DI Leach	_ ·
MB 880-43541/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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### **QC Association Summary**

Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H Job ID: 890-3776-1

SDG: 03C1558155

### HPLC/IC (Continued)

### Leach Batch: 43541 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 43614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3776-1	SS06	Soluble	Solid	300.0	43541
MB 880-43541/1-A	Method Blank	Soluble	Solid	300.0	43541
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	300.0	43541
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43541
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	43541
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	43541

### **Lab Chronicle**

 Client: Ensolum
 Job ID: 890-3776-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Client Sample ID: SS06 Lab Sample ID: 890-3776-1

Matrix: Solid

Date Collected: 01/06/23 10:15 Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	43675	01/10/23 15:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43697	01/11/23 11:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43741	01/11/23 13:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			43892	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43779	01/12/23 22:59	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	43541	01/09/23 12:54	KS	EET MID
Soluble	Analysis	300.0		1			43614	01/10/23 15:02	СН	EET MID

### Laboratory References:

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

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### **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-3776-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

### **Laboratory: Eurofins Midland**

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

Authority		ogram	Identification Number	Expiration Date	
Texas	NE	ELAP	T104704400-22-25	06-30-23	
The following analytes	are included in this report, bu	ıt the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes fo	
the agency does not of	fer certification.	•	, , ,	.,,	
the agency does not of Analysis Method	fer certification . Prep Method	Matrix	Analyte	-,,,	
0 ,		Matrix Solid	Analyte Total TPH		

### **Method Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3776-1

SDG: 03C1558155

Laboratory	
EET MID	
EET MID	
EET MID	

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

### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

### Laboratory References:

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

### **Sample Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3776-1

SDG: 03C1558155

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3776-1	SS06	Solid	01/06/23 10:15	01/06/23 13:17	0.5'

eurofins

Xenco

**Environment Testing** 

Company Name:

5122 Natil Parts Huy

Company Name:

3104 E

Greene Energy

Program:

UST/PST PRP Brownfields

RRC

Superfund

State of Project:

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

Bill to: (if different)

Garrett Green

Tacoma Mornssey

# Chain of Custody

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

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Work Order Comments	www.xenco.com	Work Order No:
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ure) Date/Time	Relinquished by: (Signature) Received by: (Signature)	Date/Time Re		Received by: (Signature)	Received I	Signature)	chinquished by: (Signature)
	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.	s Xenco, its affiliates and subcoi s incurred by the client if such lo ofins Xenco, but not analyzed. T	client company to Eurofi for any losses or expense sample submitted to Eu	valid purchase order from a sasume any responsibility and a charge of \$5 for each	amples constitutes a samples and shall not illed to each project a	nent and relinquishment of s be liable only for the cost of charge of \$85.00 will be app	Signature of this docur ce. Eurofins Xenco will fins Xenco. A minimum
Ag SiO <sub>2</sub> Na Sr II Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471	4 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631/245.1/7470	As Ba Be B Cd Ca b As Ba Be Cd Cr Co	Texas 11 Al Sb 6010 : 8RCRA Sk	8RCRA 13PPM To		Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 rcle Method(s) ar
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Incident #		X X X	5' 6 1	1015 0.5	5 1/6/23	S	3006
Sample Comments	Charles of Charles	BT TP Ch	th Grab/ # of Comp	Time Depth	Date Sampled	cation Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC	890-3776 Chair of Custod:	H	1	Corrected Temperature:	Corrected T		Total Containers:
Zn Acetate+NaOH: Zn			N.3	e Reading:		Yes No N/A	Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>		d C	i		Correction Factor:	Yes No ANA	Cooler Custody Seals:
NaHSO 4: NABIS		2	430	er ID:	Thermometer ID:		Samples Received Intact:
H <sub>3</sub> PO <sub>4</sub> : HP			8 Neters	Wet Ice:	<b>Ces</b> No	Temp Blank:	SAMPLE RECEIPT
H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub> NaOH; Na			L_	the lab, if received by 4:30pm			
			eived by	TAT starts the day received by	Roberts	Mcredith P	
0				Due Date:	84166	32.10185-10384166	Project Location:
None: NO DI Water: H <sub>2</sub> O			Rush Code	Routine DF	UT_	03C1558155   Moutine   Ru	Project Number:
Preservative Codes	ANALYSIS REQUEST		۵	O N-1 Turn Aroun	hy Draw9	PLU 25 Brus	Project Name:
	Deliverables: EDD	Lacusching-com	tmorrisse-	Email:	8307	337-251-8307	Phone:
Dollivorables: EDD ADAPT Other:			Cult pract		141.00	100 1 20 act 12 1 00 eve	City, State Lit.

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3776-1 SDG Number: 03C1558155

Login Number: 3776 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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: 890-3776-1 SDG Number: 03C1558155

**List Source: Eurofins Midland** 

List Number: 2

Login Number: 3776 List Creation: 01/09/23 08:26 AM Creator: Rodriguez, Leticia

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	
s 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	

Released to Imaging: 5/30/2023 10:43:51 AM

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701 Generated 1/13/2023 12:08:19 PM

# **JOB DESCRIPTION**

PLU 25 Brushy Draw 901H SDG NUMBER 03C1558155

### **JOB NUMBER**

890-3777-1

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 1/13/2023 12:08:19 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

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Client: Ensolum
Project/Site: PLU 25 Brushy Draw 901H
Laboratory Job ID: 890-3777-1
SDG: 03C1558155

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### **Definitions/Glossary**

Job ID: 890-3777-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

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

**GC Semi VOA** 

Qualifier **Qualifier Description** 

\*1 LCS/LCSD RPD exceeds control limits.

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

HPLC/IC

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

MCL

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3777-1 SDG: 03C1558155

Job ID: 890-3777-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3777-1

### Receipt

The sample was received on 1/6/2023 1:17 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

### **Receipt Exceptions**

The following sample was received and analyzed from an unpreserved bulk soil jar: SS05 (890-3777-1).

### **GC VOA**

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

### GC Semi VOA

Method 8015MOD\_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-43713 and analytical batch 880-43779 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-43713/1-A). Evidence of matrix interferences is not obvious.

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

### 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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Matrix: Solid

Lab Sample ID: 890-3777-1

### **Client Sample Results**

 Client: Ensolum
 Job ID: 890-3777-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Client Sample ID: SS05

Date Collected: 01/06/23 10:10 Date Received: 01/06/23 13:17

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		01/09/23 11:16	01/10/23 21:13	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/09/23 11:16	01/10/23 21:13	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		01/09/23 11:16	01/10/23 21:13	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/09/23 11:16	01/10/23 21:13	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/09/23 11:16	01/10/23 21:13	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/09/23 11:16	01/10/23 21:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130			01/09/23 11:16	01/10/23 21:13	1
1,4-Difluorobenzene (Surr)	108		70 - 130			01/09/23 11:16	01/10/23 21:13	1
Method: TAL SOP Total BTEX - T	otal BTEX Cal	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			01/11/23 10:30	1
Method: SW846 8015 NM - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	58.7		49.9	mg/Kg			01/13/23 12:46	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (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		01/11/23 09:47	01/12/23 23:21	1
Diesel Range Organics (Over C10-C28)	58.7	*1	49.9	mg/Kg		01/11/23 09:47	01/12/23 23:21	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/11/23 09:47	01/12/23 23:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	92		70 - 130			01/11/23 09:47	01/12/23 23:21	1
o-Terphenyl	88		70 - 130			01/11/23 09:47	01/12/23 23:21	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	670		5.01	mg/Kg			01/10/23 15:06	1

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## **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-3777-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

•				Percent Surrogate Re
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-23405-A-1-A MS	Matrix Spike	112	99	
880-23405-A-1-B MSD	Matrix Spike Duplicate	102	107	
890-3777-1	SS05	112	108	
LCS 880-43514/1-A	Lab Control Sample	104	109	
LCSD 880-43514/2-A	Lab Control Sample Dup	103	106	
MB 880-43514/5-A	Method Blank	100	105	
Surrogate Legend				
BFB = 4-Bromofluoroben	zene (Surr)			
DFBZ = 1,4-Difluorobenz	ene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

		1001	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3777-1	SS05	92	88
890-3781-A-21-D MS	Matrix Spike	87	82
890-3781-A-21-E MSD	Matrix Spike Duplicate	105	94
LCS 880-43713/2-A	Lab Control Sample	125	108
LCSD 880-43713/3-A	Lab Control Sample Dup	101	85
MB 880-43713/1-A	Method Blank	140 S1+	123

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

1

Job ID: 890-3777-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-43514/5-A

Lab Sample ID: LCS 880-43514/1-A

**Matrix: Solid** 

Analysis Batch: 43599

**Matrix: Solid** Analysis Batch: 43599 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43514

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 11:16	01/10/23 12:50	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/09/23 11:16	01/10/23 12:50	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	d Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	01/09/23 11	1:16 01/10/23 12:50	) 1
1,4-Difluorobenzene (Surr)	105		70 - 130	01/09/23 11	:16 01/10/23 12:50	0 1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43514

Prep Type: Total/NA

35

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Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits mg/Kg Benzene 0.100 0.1049 105 70 - 130 Toluene 0.100 0.1007 mg/Kg 101 70 - 130 0.100 0.09799 Ethylbenzene mg/Kg 98 70 - 130 0.200 0.2008 100 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.09693 70 - 130 o-Xylene mg/Kg

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	109	70 - 130

Client Sample ID: Lab Control Sample Dup

101

96

70 - 130

70 - 130

**Matrix: Solid** Analysis Batch: 43599

Lab Sample ID: LCSD 880-43514/2-A

Prep Batch: 43514 RPD LCSD LCSD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Limit Benzene 0.100 0.1036 mg/Kg 104 70 - 130 35 Toluene 0.100 0.09817 mg/Kg 98 70 - 130 3 35 Ethylbenzene 0.100 0.09733 mg/Kg 97 70 - 130 35

0.200

0.100

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: 880-23405-A-1-A MS

**Matrix: Solid** 

m-Xylene & p-Xylene

o-Xylene

Analysis Batch: 43599

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

0.2012

0.09640

mg/Kg

mg/Kg

Prep Batch: 43514

_	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00202	U F1	0.0996	0.06305	F1	mg/Kg		63	70 - 130	
Toluene	<0.00202	U F1	0.0996	0.06776	F1	mg/Kg		68	70 - 130	

Client Sample ID: Matrix Spike

70 - 130

Client Sample ID: Matrix Spike Duplicate

70 - 130

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43713

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Prep Type: Total/NA

### QC Sample Results

Job ID: 890-3777-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

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

<0.00202 U

<0.00202 U

Lab Sample ID: 880-23405-A-1-A MS **Matrix: Solid** 

o-Xylene

Analysis Batch: 43599									Prepi	Batcn: 43514
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00202	U	0.0996	0.07235	-	mg/Kg		73	70 - 130	
m-Xylene & p-Xylene	<0.00403	U	0.199	0.1515		mg/Kg		76	70 - 130	

0.07547

0.07736

mg/Kg

mg/Kg

0.0996

MS MS Qualifier Surrogate %Recovery Limits 70 - 130 4-Bromofluorobenzene (Surr) 112 1,4-Difluorobenzene (Surr) 70 - 130 99

Lab Sample ID: 880-23405-A-1-B MSD

Matrix: Solid									Prep 1	Type: To	tal/NA
Analysis Batch: 43599									Prep	Batch:	43514
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00202	U F1	0.0990	0.07917		mg/Kg		80	70 - 130	23	35
Toluene	<0.00202	U F1	0.0990	0.07562		mg/Kg		76	70 - 130	11	35
Ethylbenzene	<0.00202	U	0.0990	0.07569		mg/Kg		76	70 - 130	5	35
m-Xylene & p-Xylene	<0.00403	U	0.198	0.1576		mg/Kg		80	70 - 130	4	35

0.0990

MSD MSD Qualifier Limits Surrogate %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 102 1,4-Difluorobenzene (Surr) 107 70 - 130

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

Lab Sample ID: MB 880-43713/1-A

**Matrix: Solid** 

o-Xylene

Analysis Batch: 43779

_	мв	МВ					•	
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
Oll Range Organics (Over C28-C36)	<50.0	11	50.0	ma/Ka		01/11/23 09:47	01/12/23 10:44	1

MB MB Limits %Recovery Qualifier Prepared Dil Fac Surrogate Analyzed 1-Chlorooctane 140 S1+ 70 - 130 01/11/23 09:47 01/12/23 19:44 123 70 - 130 01/11/23 09:47 01/12/23 19:44 o-Terphenyl

Lab Sample ID: LCS 880-43713/2-A

**Matrix: Solid** 

Analysis Batch: 43779							Prep	Batch: 43713
	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	1063		mg/Kg		106	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1036		mg/Kg		104	70 - 130	
C10-C28)								

**Eurofins Carlsbad** 

Prep Type: Total/NA

Job ID: 890-3777-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

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

Lab Sample ID: LCS 880-43713/2-A

Lab Sample ID: 890-3781-A-21-D MS

**Matrix: Solid** 

Client: Ensolum

**Analysis Batch: 43779** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43713

LCS LCS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 125 70 - 130 o-Terphenyl 108 70 - 130

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 880-43713/3-A **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 43779 Prep Batch: 43713

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 978.4 98 70 - 1308 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 766.4 \*1 77 mg/Kg 70 - 13030 20

C10-C28)

**Matrix: Solid** 

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	85		70 - 130

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 43713

**Analysis Batch: 43779** Sample Sample Spike MS MS

Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <50.0 U 998 927.5 mg/Kg 89 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U \*1 998 862.9 mg/Kg 86 70 - 130 C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 87 70 - 130 o-Terphenyl 82

Lab Sample ID: 890-3781-A-21-E MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** 

**Analysis Batch: 43779** 

Prep Type: Total/NA

Prep Batch: 43713

	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	997	1064		mg/Kg		103	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	997	993.4		mg/Kg		100	70 - 130	14	20

MSD MSD %Recovery Qualifier Surrogate Limits 1-Chlorooctane 105 70 - 130 94 70 - 130 o-Terphenyl

Client: Ensolum Job ID: 890-3777-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

**Prep Type: Soluble** 

Client Sample ID: Method Blank

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43541/1-A

**Matrix: Solid** 

Analysis Batch: 43614

MB MB

Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 01/10/23 12:53

Lab Sample ID: LCS 880-43541/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 43614

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 249.6 mg/Kg 100 90 - 110

Lab Sample ID: LCSD 880-43541/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 43614

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 249.7 mg/Kg 100 90 - 110

Lab Sample ID: 890-3774-A-2-C MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 43614

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added %Rec Result Qualifier Unit Limits 825.5 Chloride 550 250 110 90 - 110 mg/Kg

Lab Sample ID: 890-3774-A-2-D MSD

**Matrix: Solid** 

Analysis Batch: 43614

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 550 799.5 mg/Kg 100 90 - 110 20

### **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3777-1

SDG: 03C1558155

#### **GC VOA**

### Prep Batch: 43514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Total/NA	Solid	5035	
MB 880-43514/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43514/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43514/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23405-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-23405-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 43599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Total/NA	Solid	8021B	43514
MB 880-43514/5-A	Method Blank	Total/NA	Solid	8021B	43514
LCS 880-43514/1-A	Lab Control Sample	Total/NA	Solid	8021B	43514
LCSD 880-43514/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43514
880-23405-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	43514
880-23405-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	43514

#### **Analysis Batch: 43728**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

### Prep Batch: 43713

<b>Lab Sample ID</b> 890-3777-1	Client Sample ID SS05	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 43779**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Total/NA	Solid	8015B NM	43713
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015B NM	43713
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43713
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43713
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43713
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43713

#### Analysis Batch: 43893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Total/NA	Solid	8015 NM	

### HPLC/IC

#### Leach Batch: 43541

_	011 / 0   1   15				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Soluble	Solid	DI Leach	
MB 880-43541/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3777-1

### SDG: 03C1558155

### HPLC/IC (Continued)

### Leach Batch: 43541 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 43614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3777-1	SS05	Soluble	Solid	300.0	43541
MB 880-43541/1-A	Method Blank	Soluble	Solid	300.0	43541
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	300.0	43541
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43541
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	43541
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	43541

### **Lab Chronicle**

Client: Ensolum Job ID: 890-3777-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

**Client Sample ID: SS05** Lab Sample ID: 890-3777-1

Date Collected: 01/06/23 10:10 Matrix: Solid Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	43514	01/09/23 11:16	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43599	01/10/23 21:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43728	01/11/23 10:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			43893	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43779	01/12/23 23:21	AJ	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	43541	01/09/23 12:54	KS	EET MID
Soluble	Analysis	300.0		1			43614	01/10/23 15:06	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 Job ID: 890-3777-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

### **Laboratory: Eurofins Midland**

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

Authority Texas		ogram	Identification Number	<b>Expiration Date</b>	
		ELAP	T104704400-22-25	06-30-23	
The following analytes the agency does not of	• •	it the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes fo	
Analysis Method	Prep Method	Matrix	Analyte		
8015 NM		Solid	Total TPH		

### **Method Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3777-1

SDG: 03C1558155

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

#### **Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

### **Sample Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3777-1

SDG: 03C1558155

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3777-1	SS05	Solid	01/06/23 10:10	01/06/23 13:17	0.5'

eurofins

Xenco

**Environment Testing** 

Company Name:

3122 Nati Parks

Enselum, LLC

Bill to: (if different)

Garrett Green

X70

thergy

State of Project:

Company Name:

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

		,	
Program:			
Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐ Superfund ☐	Work Order Comments	www.xenco.com	Work Order No:
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nature) Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time		(re)	Received by: (Signature	Rece	: (Signature)	Glinquished by: (Signature)
	s and conditions ond the control previously negotiated.	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 585.00 will be applied to each project and a charge of 55 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously nego	Xenco, Its affiliates and su incurred by the client if su ins Xenco, but not analyz	ny to Eurofins or expenses litted to Eurof	rder from client compar ponsibility for any losses 5 for each sample subm	tutes a valid purchase o hall not assume any res, roject and a charge of \$	ent of samples consti cost of samples and si be applied to each p	cument and relinquishme will be liable only for the c um charge of \$85.00 will	otice: Signature of this do service. Eurofins Xenco Eurofins Xenco. A minim
Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471	VI K Se	1 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo NTCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	As Ba Be Cd Cr	Al Sb As CRA Sb A	13PPM Texas 11 LP / SPLP 6010 : 8R0	8RCRA 13F TCLP/	be analyzed	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 ircle Method(s) ar
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Cost Center									
AAPP22325371823		MC	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\						
incadent #:			X X X	_	0.516	123 1010	5 1/6/23	J)	5805
Sample Comments			BT TP Ch	# of Cont	Depth Grab/	te Time bled Sampled	Matrix Date Sampled	tification	Sample Identification
NaOH+Ascorbic Acid: SAPC			11		1.4.	Corrected Temperature:	Correc		Total Containers:
Zn Acetate+NaOH: Zn	ody	890-3777 Chain of Custody		1	8.41	Temperature Reading:	NA Tempe	s: Yes No	Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>			.es	Pa	E.C.	Correction Factor:	Correc	Yes No	Cooler Custody Seals:
NaHSO 4: NABIS				aran	DO WALL	Thermometer ID:	No Therm	(Nes	Samples Received Intact:
H <sub>3</sub> PO <sub>4</sub> : HP				neter	No No	No Wet Ice:	5	Temp Blank:	SAMPLE RECEIPT
H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na				s	the lab, if received by 4:30pm				PO #:
					TAT starts the day received by		Buberts	Meredith	Sampler's Name:
<u>o</u>						b Due Date:	103.8416	32,10185, 703.84166	Project Location:
None: NO DI Water: H <sub>2</sub> O				Code	Rush	<b>U</b> Routine	25	0301558155	Project Number:
Preservative Codes		ANALYSIS REQUEST			Turn Around	HIOP	Shy Draw	PLU 25 Brushy Draw	Project Name:
ADaPT Other:	Deliverables: EDD	Ochselm Com	73	morrisser		Email:	7.8307	337-257-830	Phone:
Reporting: Level   Level   PSI/OSI   IRRP   Level IV	porting: Level    Level    L	NH 88 220 Kep	Cartsbad,		City, State ZIP:	88220	てスゴ	Carlsbad	City, State ZIP:

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3777-1

SDG Number: 03C1558155

Login Number: 3777 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

Job Number: 890-3777-1 SDG Number: 03C1558155

Login Number: 3777
List Source: Eurofins Midland
List Number: 2
List Creation: 01/09/23 08:26 AM

Creator: Rodriguez, Leticia

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	N/A	

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<6mm (1/4").

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701 Generated 1/13/2023 12:08:50 PM

# **JOB DESCRIPTION**

PLU 25 Brushy Draw 901H SDG NUMBER 03C1558155

# **JOB NUMBER**

890-3778-1

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 1/13/2023 12:08:50 PM

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

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Client: Ensolum
Project/Site: PLU 25 Brushy Draw 901H
SDG: 03C1558155

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### **Definitions/Glossary**

Job ID: 890-3778-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

**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** 

\*1 LCS/LCSD RPD exceeds control limits.

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3778-1 SDG: 03C1558155

Job ID: 890-3778-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3778-1

#### Receipt

The sample was received on 1/6/2023 1:17 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

#### **Receipt Exceptions**

The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-3778-1).

#### **GC VOA**

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS04 (890-3778-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD\_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-43713 and analytical batch 880-43779 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-43713/1-A). Evidence of matrix interferences is not obvious.

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

#### 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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Matrix: Solid

Lab Sample ID: 890-3778-1

### **Client Sample Results**

Client: Ensolum Job ID: 890-3778-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

**Client Sample ID: SS04** 

Date Collected: 01/06/23 10:05 Date Received: 01/06/23 13:17

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		01/10/23 15:19	01/11/23 19:04	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/10/23 15:19	01/11/23 19:04	,
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/10/23 15:19	01/11/23 19:04	
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/10/23 15:19	01/11/23 19:04	
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/10/23 15:19	01/11/23 19:04	
Kylenes, Total	<0.00402	U	0.00402	mg/Kg		01/10/23 15:19	01/11/23 19:04	•
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	77		70 - 130			01/10/23 15:19	01/11/23 19:04	
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130			01/10/23 15:19	01/11/23 19:04	
Method: TAL SOP Total BTEX - T	otal BTEX Cal	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00402	U	0.00402	mg/Kg			01/12/23 13:07	1
Method: SW846 8015 NM - Diese Analyte Total TPH		Qualifier	RL 49.9	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 01/13/23 12:46	Dil Fac
IOTAL IPH	<49.9	U	49.9	mg/Kg			01/13/23 12:46	1
Method: SW846 8015B NM - Dies	sel Range Orga	inics (DRO)	(GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics GRO)-C6-C10	<49.9	U	49.9	mg/Kg		01/11/23 09:47	01/12/23 23:42	•
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		01/11/23 09:47	01/12/23 23:42	•
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/11/23 09:47	01/12/23 23:42	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	108		70 - 130			01/11/23 09:47	01/12/23 23:42	1
o-Terphenyl	101		70 - 130			01/11/23 09:47	01/12/23 23:42	1
Madhada NG AMBA 200 O A Sissa	Inn Ohners st		- Luded -					
Method: MCAWW 300.0 - Anions Analyte	•	ography - So Qualifier	Oluble RL	Unit	D	Prepared	Analyzed	Dil Fa

4.97

mg/Kg

321

**Eurofins Carlsbad** 

01/10/23 15:11

Chloride

## **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-3778-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

-				Percent Surrogate Re
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3776-A-1-C MS	Matrix Spike	99	98	
890-3776-A-1-D MSD	Matrix Spike Duplicate	91	101	
890-3778-1	SS04	77	69 S1-	
LCS 880-43675/1-A	Lab Control Sample	89	104	
LCSD 880-43675/2-A	Lab Control Sample Dup	92	101	
MB 880-43675/5-A	Method Blank	86	94	
Surrogate Legend				
BFB = 4-Bromofluorobenze	ene (Surr)			
DFBZ = 1,4-Difluorobenze	ne (Surr)			

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3778-1	SS04	108	101	
890-3781-A-21-D MS	Matrix Spike	87	82	
890-3781-A-21-E MSD	Matrix Spike Duplicate	105	94	
LCS 880-43713/2-A	Lab Control Sample	125	108	
LCSD 880-43713/3-A	Lab Control Sample Dup	101	85	
MB 880-43713/1-A	Method Blank	140 S1+	123	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3778-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-43675/5-A

Lab Sample ID: LCS 880-43675/1-A

**Matrix: Solid** Analysis Batch: 43697 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43675

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/10/23 15:19	01/11/23 11:10	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/10/23 15:19	01/11/23 11:10	1

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	Pro	epared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	01/10	0/23 15:19	01/11/23 11:10	1
1,4-Difluorobenzene (Surr)	94		70 - 130	01/10	0/23 15:19	01/11/23 11:10	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43675

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1055 mg/Kg 106 70 - 130 Toluene 0.100 0.1010 mg/Kg 101 70 - 130 0.100 0.08629 Ethylbenzene mg/Kg 86 70 - 130 0.200 89 70 - 130 m-Xylene & p-Xylene 0.1771 mg/Kg 0.100 70 - 130 o-Xylene 0.1024 mg/Kg 102

LCS LCS

Surrogate	%Recovery Qua	lifier Limits
4-Bromofluorobenzene (Surr)	89	70 - 130
1,4-Difluorobenzene (Surr)	104	70 - 130

Lab Sample ID: LCSD 880-43675/2-A Client Sample ID: Lab Control Sample Dup

LCSD LCSD

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 43697

Analysis Batch: 43697

Prep Type: Total/NA Prep Batch: 43675

> RPD %Rec

Analyte	Added	Result	Qualifier Unit	D %Rec	Limits	RPD	Limit
Benzene	0.100	0.09843	mg/Kg	98	70 - 130	7	35
Toluene	0.100	0.09734	mg/Kg	97	70 - 130	4	35
Ethylbenzene	0.100	0.08392	mg/Kg	84	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1750	mg/Kg	88	70 - 130	1	35
o-Xylene	0.100	0.09879	mg/Kg	99	70 - 130	4	35

Spike

LCSD LCSD

Surrogate	%Recovery Qual	ifier Limits
4-Bromofluorobenzene (Surr)	92	70 - 130
1,4-Difluorobenzene (Surr)	101	70 - 130

Lab Sample ID: 890-3776-A-1-C MS

**Matrix: Solid** 

Analysis Batch: 43697

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

Prep Batch: 43675

_	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00198	U	0.0998	0.09320		mg/Kg	_	93	70 - 130	
Toluene	<0.00198	U	0.0998	0.09451		mg/Kg		95	70 - 130	

#### QC Sample Results

Job ID: 890-3778-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

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

Lab Sample ID: 890-3776-A-1-C MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Analysis Batch: 43697

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00198	U	0.0998	0.08225		mg/Kg		82	70 - 130	
m-Xylene & p-Xylene	<0.00396	U	0.200	0.1716		mg/Kg		86	70 - 130	
o-Xylene	<0.00198	U	0.0998	0.09664		mg/Kg		97	70 - 130	

MS MS

Surrogate 4-Bromofluorobenzene (Surr)	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	99	70 - 130
1,4-Difluorobenzene (Surr)	98	70 - 130

Lab Sample ID: 890-3776-A-1-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

m-Xylene & p-Xylene

o-Xylene

Analysis Batch: 43697

Prep Type: Total/NA

70 - 130

70 - 130

79

88

Prep Batch: 43675

Prep Type: Total/NA

Prep Batch: 43675

Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits Benzene <0.00198 U 0.101 0.09630 mg/Kg 96 70 - 130 3 35 Toluene <0.00198 U 0.101 0.09074 mg/Kg 90 70 - 130 4 35 Ethylbenzene <0.00198 U 0.101 0.07746 77 70 - 130 35 mg/Kg 6

0.1595

0.08869

mg/Kg

mg/Kg

0.202

0.101

MSD MSD

мв мв

<0.00396 U

<0.00198 U

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

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

Lab Sample ID: MB 880-43713/1-A Client Sample ID: Method Blank **Matrix: Solid** 

Analysis Batch: 43779

Prep Type: Total/NA Prep Batch: 43713

Result Qualifier RL Unit D Prepared Analyzed Dil Fac Analyte Gasoline Range Organics 50.0 01/11/23 09:47 01/12/23 19:44 <50.0 U mg/Kg (GRO)-C6-C10 50.0 01/11/23 09:47 01/12/23 19:44 Diesel Range Organics (Over <50.0 U mg/Kg C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 01/11/23 09:47 01/12/23 19:44 mg/Kg

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	140 S1+	70 - 130	01/11/23 09:47	01/12/23 19:44	1
o-Terphenyl	123	70 - 130	01/11/23 09:47	01/12/23 19:44	1

Lab Sample ID: LCS 880-43713/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

**Analysis Batch: 43779** Prep Batch: 43713 Spike LCS LCS %Rec

	•						
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	1063		mg/Kg		106	70 - 130
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	1036		mg/Kg		104	70 - 130
C10-C28)							

**Eurofins Carlsbad** 

Prep Type: Total/NA

35

Job ID: 890-3778-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

Limits

70 - 130

70 - 130

SDG: 03C1558155

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

108

Lab Sample ID: LCS 880-43713/2-A

**Matrix: Solid** 

o-Terphenyl

Analysis Batch: 43779

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 43713

LCS LCS Surrogate %Recovery Qualifier 1-Chlorooctane 125

Lab Sample ID: LCSD 880-43713/3-A

Lab Sample ID: 890-3781-A-21-D MS

**Matrix: Solid** 

Analysis Batch: 43779

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 43713

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1000 978.4 98 70 - 1308 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 766.4 \*1 77 mg/Kg 70 - 13030 20 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 101 70 - 130 1-Chlorooctane 85 70 - 130 o-Terphenyl

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 43713

Sample Sample MS MS Spike Analyte Added Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <50.0 U 998 927.5 mg/Kg 89 70 - 130 (GRO)-C6-C10 <50.0 U \*1 Diesel Range Organics (Over 998 862.9 mg/Kg 86 70 - 130 C10-C28)

**Matrix: Solid** 

**Analysis Batch: 43779** 

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 87 o-Terphenyl 82 70 - 130

Lab Sample ID: 890-3781-A-21-E MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** 

**Analysis Batch: 43779** 

Prep Type: Total/NA

Prep Batch: 43713

Sample Sample MSD MSD RPD Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline Range Organics <50.0 U 997 1064 103 70 - 130 14 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U \*1 997 993.4 mg/Kg 100 70 - 130 14 20

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	94		70 - 130

Client: Ensolum

Job ID: 890-3778-1

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

SDG: 03C1558155

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43541/1-A

Project/Site: PLU 25 Brushy Draw 901H

**Matrix: Solid** 

Analysis Batch: 43614

MB MB

Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 01/10/23 12:53

Lab Sample ID: LCS 880-43541/2-A

**Matrix: Solid** 

Analysis Batch: 43614

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 249.6 mg/Kg 100 90 - 110

Lab Sample ID: LCSD 880-43541/3-A

**Matrix: Solid** 

Analysis Batch: 43614

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 249.7 mg/Kg 100 90 - 110

Lab Sample ID: 890-3774-A-2-C MS

**Matrix: Solid** 

Analysis Batch: 43614

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added %Rec Result Qualifier Unit Limits 825.5 Chloride 550 250 110 90 - 110 mg/Kg

Lab Sample ID: 890-3774-A-2-D MSD

**Matrix: Solid** 

Analysis Batch: 43614

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 550 799.5 mg/Kg 100 90 - 110 20

## **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3778-1 SDG: 03C1558155

#### **GC VOA**

#### Prep Batch: 43675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Total/NA	Solid	5035	
MB 880-43675/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43675/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43675/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3776-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3776-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 43697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Total/NA	Solid	8021B	43675
MB 880-43675/5-A	Method Blank	Total/NA	Solid	8021B	43675
LCS 880-43675/1-A	Lab Control Sample	Total/NA	Solid	8021B	43675
LCSD 880-43675/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43675
890-3776-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	43675
890-3776-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	43675

#### Analysis Batch: 43813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

### Prep Batch: 43713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 43779**

<b>Lab Sample ID</b> 890-3778-1	Client Sample ID SS04	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 43713
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015B NM	43713
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43713
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43713
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43713
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43713

#### Analysis Batch: 43894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Total/NA	Solid	8015 NM	

### HPLC/IC

#### Leach Batch: 43541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Soluble	Solid	DI Leach	
MB 880-43541/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

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# **QC Association Summary**

Client: Ensolum

Job ID: 890-3778-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

### HPLC/IC (Continued)

### Leach Batch: 43541 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 43614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3778-1	SS04	Soluble	Solid	300.0	43541
MB 880-43541/1-A	Method Blank	Soluble	Solid	300.0	43541
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	300.0	43541
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43541
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	43541
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	43541

### **Lab Chronicle**

Client: Ensolum Job ID: 890-3778-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

**Client Sample ID: SS04** Lab Sample ID: 890-3778-1

Matrix: Solid

Date Collected: 01/06/23 10:05 Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	43675	01/10/23 15:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43697	01/11/23 19:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43813	01/12/23 13:07	AJ	EET MID
Total/NA	Analysis	8015 NM		1			43894	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43779	01/12/23 23:42	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	43541	01/09/23 12:54	KS	EET MID
Soluble	Analysis	300.0		1			43614	01/10/23 15:11	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 Job ID: 890-3778-1

Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

### **Laboratory: Eurofins Midland**

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

Authority		ogram	Identification Number	Expiration Date
Texas	NELAP		T104704400-22-25	06-30-23
The following analytes	are included in this report, bu	it the laboratory is not certifi	ied by the governing authority. This list ma	av include analytes for
the agency does not of		,	ieu sy ale gerelling adalemy.	ay molade analytes for
the agency does not of Analysis Method		Matrix	Analyte	ay molade analytes for
9 ,	fer certification.	•	, , ,	

### **Method Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3778-1

SDG: 03C1558155

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

#### **Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

### **Sample Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3778-1

SDG: 03C1558155

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3778-1	SS04	Solid	01/06/23 10:05	01/06/23 13:17	0.5'

Chain of Custody

ouston, TX (281) 240-4200, Dallas, TX (214) 902-0300	Citation Castody
	louston, TX (281) 240-4200, Dallas, TX (214) 902-0300

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		4	1-6-23 13	a Stiff	week		* Mou
Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	nature)	Received by: (Signature)	/: (Signature)	Relinquished by: (Signature)
	s and conditions ond the control previously negotiated.	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 it such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$35.00 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 nego	Eurofins Xenco, its affiliates an kpenses incurred by the client to Eurofins Xenco, but not an	asse order from client company to ny responsibility for any losses or e ge of \$5 for each sample submitted	of samples constitutes a valid purch of samples and shall not assume ar pplied to each project and a charg	cument and relinquishment o will be liable only for the cost o um charge of \$85.00 will be a	Notice: Signature of this do of service. Eurofins Xenco of Eurofins Xenco. A minin
TI Sn U V Zn /7470 /7471	Ni K Se Ag SiO <sub>2</sub> Na Sr Hg: 1631/245.1	Ca Cr Co Cu Fe Pb Mg r Co Cu Pb Mn Mo Ni Se	Al Sb As Ba Be B Cd CRA Sb As Ba Be Cd C	13PPM Texas 11 AI LP / SPLP 6010 : 8RCR/	8RCR/	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 Circle Method(s) ar
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Sample Comments	S		Cont of BT	Depth Comp	Matrix Date Time Sampled		Sample Identification
NaOH+Ascorbic Acid: SAPC		090-07-0	H	ture: 4	Corrected Temperature:		Total Containers:
Zn Acetate+NaOH: Zn				L'A	N/A Temperature Reading:	Yes No	Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> 0			4	M/A Correction Factor:	Yes No	Cooler Custody Seals:
NaHSO 4: NABIS	NaHSO			tomes-	Thermometer ID:		Samples Received Intact:
; HP	Н₃РО₄:НР		eters	Ice: Yes No	k: Res No Wet Ice:	Temp Blank:	SAMPLE RECEIPT
	H <sub>2</sub> SO <sub>4</sub> :H <sub>2</sub>	-		the lab, if received by 4:30pm			PO #:
IC HNO 3: HN	HCL: HC			TAT starts the day received by		Merenith	Sampler's Name:
Cool MeOH: Me	Cool: Cool			ate:	3.84166 Due Date:	32.10185 7/03.84166	Project Location:
NO DI Water: H <sub>2</sub> O	None: NO		Pres. Code	Rush	55 MRoutine	0301558155	Project Number:
Preservative Codes	P	ANALYSIS REQUEST		Turn Around	y Draw 901H	PLL 25Bruny Draw 9014	Project Name:
Other:	Deliverables: EDD ADaPT	un. win	10	Email: tmorrissey		331 257 8307	Phone:
TRRP Level IV	Reporting: Level III Level III PST/UST TRRP	NM 88220	Carisbad	City, State ZIP:	1_	Carisback	City, State ZIP:
	State of Project:	St	3104 E	Address:	Parks Huy	3122 Nat'1	Address:
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		ck, TX (806) 794-1296 ad NM (575) 988-3199	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs: NM (575) 392-7550 (Farlsbad, NM (575) 988-3199	EL Paso,	Ĉ	>0110	
	WOLK OLDER NO.	onio, TX (210) 509-3334	Midland, 1X (432) /04-5440, San Antonio, 1X (210) 509-3334		I Chillich i Coming	< 1	
	Wall Order No.				<b>Environment Testing</b>	Fnv	

## **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 890-3778-1

 SDG Number: 03C1558155

Login Number: 3778 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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	

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### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3778-1 SDG Number: 03C1558155

List Source: Eurofins Midland

List Creation: 01/09/23 08:26 AM

Login Number: 3778 List Number: 2

Creator: Rodriguez, Leticia

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	N/A	

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<6mm (1/4").

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701 Generated 1/13/2023 12:08:49 PM

# **JOB DESCRIPTION**

PLU 25 Brushy Draw 901H SDG NUMBER 03C1558155

# **JOB NUMBER**

890-3779-1

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 1/13/2023 12:08:49 PM

Authorized for release by Jessica Kramer, Project Manager <u>Jessica.Kramer@et.eurofinsus.com</u> (432)704-5440 12:08:49 PM

Client: Ensolum
Project/Site: PLU 25 Brushy Draw 901H
Laboratory Job ID: 890-3779-1
SDG: 03C1558155

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#### **Definitions/Glossary**

Job ID: 890-3779-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

**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** 

\*1 LCS/LCSD RPD exceeds control limits.

S1+ Surrogate recovery exceeds control limits, high biased.

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

#### Case Narrative

Client: Ensolum

Job ID: 890-3779-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Job ID: 890-3779-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3779-1

#### Receipt

The sample was received on 1/6/2023 1:17 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

#### **Receipt Exceptions**

The following sample was received and analyzed from an unpreserved bulk soil jar: SS07 (890-3779-1).

#### **GC VOA**

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS07 (890-3779-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-43713 and analytical batch 880-43779 recovered outside control limits for the following analytes: Diesel Range Organics (Over C10-C28).

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-43713/1-A). Evidence of matrix interferences is not obvious.

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

#### 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 Job ID: 890-3779-1
Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Client Sample ID: SS07 Lab Sample ID: 890-3779-1

Date Collected: 01/06/23 10:20 Date Received: 01/06/23 13:17

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/10/23 10:59	01/13/23 03:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/10/23 10:59	01/13/23 03:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/10/23 10:59	01/13/23 03:25	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		01/10/23 10:59	01/13/23 03:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/10/23 10:59	01/13/23 03:25	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		01/10/23 10:59	01/13/23 03:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130			01/10/23 10:59	01/13/23 03:25	1
1,4-Difluorobenzene (Surr)	65	S1-	70 - 130			01/10/23 10:59	01/13/23 03:25	1
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	ulation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			01/13/23 08:07	1
Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (	GC)					
Analyte	Result	ics (DRO) (Gualifier	RL	Unit ma/Ka	<u>D</u>	Prepared	Analyzed	Dil Fac
Analyte	•		•	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 01/13/23 12:46	Dil Fac
Analyte Total TPH	Result 65.4	Qualifier	50.0		<u>D</u>	Prepared		Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Dies	Result 65.4 sel Range Orga	Qualifier	50.0		<u>D</u>	Prepared Prepared		Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics	Result 65.4 sel Range Orga	Qualifier  nics (DRO)  Qualifier	RL 50.0	mg/Kg			01/13/23 12:46	1
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result 65.4 sel Range Orga Result	Qualifier  nics (DRO)  Qualifier  U	RL 50.0 (GC)	mg/Kg		Prepared	01/13/23 12:46  Analyzed	1 Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result 65.4 sel Range Orga Result <50.0	Qualifier  nics (DRO) Qualifier U	(GC) RL 50.0	mg/Kg  Unit  mg/Kg		Prepared 01/11/23 09:47	01/13/23 12:46  Analyzed  01/13/23 00:04	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result 65.4 sel Range Orga Result <50.0 65.4	Qualifier  nics (DRO) Qualifier  U  *1	RL 50.0 (GC) RL 50.0 50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 01/11/23 09:47 01/11/23 09:47	01/13/23 12:46  Analyzed  01/13/23 00:04  01/13/23 00:04	1 Dil Fac 1
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result	Qualifier  nics (DRO) Qualifier  U  *1	RL 50.0  (GC)  RL 50.0  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47	Analyzed 01/13/23 00:04 01/13/23 00:04 01/13/23 00:04	1 Dil Fac 1 1
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   65.4	Qualifier  nics (DRO) Qualifier  U  *1	RL 50.0  (GC)  RL 50.0  50.0  50.0  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47 Prepared	Analyzed 01/13/23 12:46  Analyzed 01/13/23 00:04 01/13/23 00:04  Analyzed	Dil Fac  1  1  Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result	Qualifier  nics (DRO) Qualifier  U  *1  U  Qualifier	RL 50.0  (GC)  RL 50.0  50.0  50.0  Limits  70 - 130  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47  Prepared 01/11/23 09:47	Analyzed 01/13/23 00:04 01/13/23 00:04 01/13/23 00:04 Analyzed 01/13/23 00:04	1 Dil Fac 1 1 1 1 Dil Fac 1
Method: SW846 8015 NM - Diese Analyte  Total TPH  Method: SW846 8015B NM - Diese Analyte  Gasoline Range Organics (GRO)-C6-C10  Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl  Method: MCAWW 300.0 - Anions Analyte	Result	Qualifier  nics (DRO) Qualifier  U  *1  U  Qualifier	RL 50.0  (GC)  RL 50.0  50.0  50.0  Limits  70 - 130  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 01/11/23 09:47 01/11/23 09:47 01/11/23 09:47  Prepared 01/11/23 09:47	Analyzed 01/13/23 00:04 01/13/23 00:04 01/13/23 00:04 Analyzed 01/13/23 00:04	1 Dil Fac 1 1 1 1 Dil Fac 1

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-3779-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Re
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3772-A-1-A MS	Matrix Spike	116	89	
890-3772-A-1-B MSD	Matrix Spike Duplicate	123	98	
890-3779-1	SS07	86	65 S1-	
LCS 880-43511/1-A	Lab Control Sample	110	100	
LCSD 880-43511/2-A	Lab Control Sample Dup	93	106	
MB 880-43511/5-A	Method Blank	85	87	
MB 880-43542/5-A	Method Blank	76	84	

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

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

Matrix: Solid Prep Type: Total/NA

		1001	ОТРН1	Percent Surrogate Recovery (Acceptance Limits)
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-3779-1	SS07	96	92	
890-3781-A-21-D MS	Matrix Spike	87	82	
890-3781-A-21-E MSD	Matrix Spike Duplicate	105	94	
LCS 880-43713/2-A	Lab Control Sample	125	108	
LCSD 880-43713/3-A	Lab Control Sample Dup	101	85	
MB 880-43713/1-A	Method Blank	140 S1+	123	
Surrogate Legend				

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

8 a

11

13

14

Client: Ensolum Job ID: 890-3779-1 Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-43511/5-A

Lab Sample ID: LCS 880-43511/1-A

**Matrix: Solid** 

Analysis Batch: 43785

**Matrix: Solid** Analysis Batch: 43785 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43511

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 10:59	01/12/23 21:55	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 10:59	01/12/23 21:55	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/09/23 10:59	01/12/23 21:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/09/23 10:59	01/12/23 21:55	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 10:59	01/12/23 21:55	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/09/23 10:59	01/12/23 21:55	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	01/09/2	23 10:59	01/12/23 21:55	1
1,4-Difluorobenzene (Surr)	87		70 - 130	01/09/2	23 10:59	01/12/23 21:55	1

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Prep Batch: 43511

Prep Type: Total/NA

Prep Batch: 43511

Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1002 mg/Kg 100 70 - 130 Toluene 0.100 0.1035 mg/Kg 103 70 - 130 0.100 0.09783 Ethylbenzene mg/Kg 98 70 - 130 0.200 0.2107 105 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.1169 70 - 130 o-Xylene mg/Kg 117

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-43511/2-A

Analysis Batch: 43785

**Matrix: Solid** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.09524		mg/Kg		95	70 - 130	5	35	
Toluene	0.100	0.09086		mg/Kg		91	70 - 130	13	35	
Ethylbenzene	0.100	0.07835		mg/Kg		78	70 - 130	22	35	
m-Xylene & p-Xylene	0.200	0.1642		mg/Kg		82	70 - 130	25	35	
o-Xvlene	0.100	0.09047		ma/Ka		90	70 - 130	25	35	

LCSD LCSD

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

Lab Sample ID: 890-3772-A-1-A MS

**Matrix: Solid** 

Analysis Batch: 43785

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

Prep Batch: 43511

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.00565		0.0990	0.08747		mg/Kg		83	70 - 130	
Toluene	0.00255		0.0990	0.08936		mg/Kg		88	70 - 130	

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Prep Batch: 43511

### QC Sample Results

Job ID: 890-3779-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H SDG: 03C1558155

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

Client Sample ID: Matrix Spike Lab Sample ID: 890-3772-A-1-A MS Prep Type: Total/NA

**Matrix: Solid** Analysis Batch: 43785

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits D Ethylbenzene <0.00202 0.0990 0.07712 mg/Kg 76 70 - 130 m-Xylene & p-Xylene 0.00520 0.198 0.1746 mg/Kg 86 70 - 130 0.00475 0.0990 0.1009 97 70 - 130 o-Xylene mg/Kg

MS MS Surrogate Qualifier Limits %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 116 1,4-Difluorobenzene (Surr) 70 - 130 89

Lab Sample ID: 890-3772-A-1-B MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Solid** Analysis Batch: 43785

Prep Batch: 43511 Sample Sample Spike MSD MSD RPD Qualifier %Rec RPD Limit Analyte Added Result Qualifier Limits Result Unit D Benzene 0.00565 0.0998 0.09758 mg/Kg 92 70 - 130 11 35 0.00255 Toluene 0.0998 0.09709 mg/Kg 95 70 - 130 8 35 Ethylbenzene <0.00202 0.0998 0.08848 87 70 - 130 35 U mg/Kg 14 m-Xylene & p-Xylene 0.00520 0.200 0.1972 mg/Kg 96 70 - 130 12 35 0.0998 70 - 130 o-Xylene 0.00475 0.1134 mg/Kg 109 12

MSD MSD Qualifier Limits Surrogate %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 123 70 - 130 1,4-Difluorobenzene (Surr) 98

Lab Sample ID: MB 880-43542/5-A

**Matrix: Solid Analysis Batch: 43785** 

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/09/23 12:55	01/12/23 11:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/09/23 12:55	01/12/23 11:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/09/23 12:55	01/12/23 11:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/09/23 12:55	01/12/23 11:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/09/23 12:55	01/12/23 11:20	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		01/09/23 12:55	01/12/23 11:20	1

MB Qualifier Dil Fac Limits Prepared Surrogate %Recovery Analyzed 4-Bromofluorobenzene (Surr) 76 70 - 130 01/09/23 12:55 01/12/23 11:20 01/09/23 12:55 1,4-Difluorobenzene (Surr) 84 70 - 130 01/12/23 11:20

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

Lab Sample ID: MB 880-43713/1-A

**Matrix: Solid** 

Analysis Batch: 43779

Prep Batch: 43713 мв мв Analyte Result Qualifier RL Unit Prepared Dil Fac <50.0 U 50.0 01/11/23 09:47 01/12/23 19:44 Gasoline Range Organics mg/Kg

(GRO)-C6-C10

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Prep Type: Total/NA

Client Sample ID: Method Blank

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

Prep Batch: 43542

o-Terphenyl

o-Terphenyl

01/11/23 09:47

01/12/23 19:44

 Client: Ensolum
 Job ID: 890-3779-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

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

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Lab Sample ID: MB 880-43713/1-A

Matrix: Solid

Analysis Batch: 43779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 43713

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/11/23 09:47	01/12/23 19:44	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	140	S1+	70 - 130			01/11/23 09:47	01/12/23 19:44	1

70 - 130

Lab Sample ID: LCS 880-43713/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA Analysis Batch: 43779 Prep Batch: 43713 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 1063 106 70 - 130 mg/Kg (GRO)-C6-C10 1000 1036 Diesel Range Organics (Over mg/Kg 104 70 - 130

70 - 130

Lab Sample ID: LCSD 880-43713/3-A

Client Sample ID: Lab Control Sample Dup
Matrix: Solid

Analysis Batch: 43779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 43713

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	978.4		mg/Kg		98	70 - 130	8	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	766.4	*1	mg/Kg		77	70 - 130	30	20	
C10-C28)										

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-3781-A-21-D MS

Matrix: Solid

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

Analysis Batch: 43779 Prep Batch: 43713

	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	998	927.5		mg/Kg		89	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U *1	998	862.9		mg/Kg		86	70 - 130	
	MS	MS								
Curromata	9/ Bassyany	Ouglifier	Limita							

 Surrogate
 %Recovery
 Qualifier
 Limits

 1-Chlorooctane
 87
 70 - 130

 o-Terphenyl
 82
 70 - 130

Job ID: 890-3779-1 Client: Ensolum Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

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

Lab Sample ID: 890-3781-A-21-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Analysis Batch: 43779 Prep Type: Total/NA Prep Batch: 43713

Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <50.0 U 997 1064 mg/Kg 103 70 - 130 14 20 (GRO)-C6-C10 997 Diesel Range Organics (Over <50.0 U \*1 993.4 mg/Kg 100 70 - 130 14

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	94		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43541/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 43614

мв мв

	Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
l	Chloride	<5.00 U	5.00	mg/Kg			01/10/23 12:53	1

Lab Sample ID: LCS 880-43541/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 43614

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	249.6		mg/Kg		100	90 - 110	

Lab Sample ID: LCSD 880-43541/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 43614

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	249 7		ma/Ka		100	90 - 110		20

Lab Sample ID: 890-3774-A-2-C MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 43614

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	550		250	825.5		ma/Ka		110	90 - 110	

Lab Sample ID: 890-3774-A-2-D MSD

**Matrix: Solid** 

Analysis Batch: 43614

Allalysis Datell. 40014											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	550		250	799.5		ma/Ka		100	90 - 110	3	20

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 25 Brushy Draw 901H

Job ID: 890-3779-1 SDG: 03C1558155

#### **GC VOA**

### Prep Batch: 43511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Total/NA	Solid	5035	
MB 880-43511/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-43511/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-43511/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3772-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
890-3772-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Prep Batch: 43542

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
l	MB 880-43542/5-A	Method Blank	Total/NA	Solid	5035	

#### Analysis Batch: 43785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Total/NA	Solid	8021B	43511
MB 880-43511/5-A	Method Blank	Total/NA	Solid	8021B	43511
MB 880-43542/5-A	Method Blank	Total/NA	Solid	8021B	43542
LCS 880-43511/1-A	Lab Control Sample	Total/NA	Solid	8021B	43511
LCSD 880-43511/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	43511
890-3772-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	43511
890-3772-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	43511

#### Analysis Batch: 43864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 43713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 43779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Total/NA	Solid	8015B NM	43713
MB 880-43713/1-A	Method Blank	Total/NA	Solid	8015B NM	43713
LCS 880-43713/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43713
LCSD 880-43713/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43713
890-3781-A-21-D MS	Matrix Spike	Total/NA	Solid	8015B NM	43713
890-3781-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43713

#### Analysis Batch: 43895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Total/NA	Solid	8015 NM	

# **QC Association Summary**

Client: Ensolum Job ID: 890-3779-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

#### HPLC/IC

#### Leach Batch: 43541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Soluble	Solid	DI Leach	
MB 880-43541/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 43614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3779-1	SS07	Soluble	Solid	300.0	43541
MB 880-43541/1-A	Method Blank	Soluble	Solid	300.0	43541
LCS 880-43541/2-A	Lab Control Sample	Soluble	Solid	300.0	43541
LCSD 880-43541/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43541
890-3774-A-2-C MS	Matrix Spike	Soluble	Solid	300.0	43541
890-3774-A-2-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	43541

#### **Lab Chronicle**

 Client: Ensolum
 Job ID: 890-3779-1

 Project/Site: PLU 25 Brushy Draw 901H
 SDG: 03C1558155

Client Sample ID: SS07 Lab Sample ID: 890-3779-1

Date Collected: 01/06/23 10:20 Matrix: Solid
Date Received: 01/06/23 13:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	43511	01/10/23 10:59	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43785	01/13/23 03:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43864	01/13/23 08:07	AJ	EET MID
Total/NA	Analysis	8015 NM		1			43895	01/13/23 12:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	43713	01/11/23 09:47	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43779	01/13/23 00:04	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	43541	01/09/23 12:54	KS	EET MID
Soluble	Analysis	300.0		1			43614	01/10/23 15:16	CH	EET MID

#### Laboratory References:

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

**Eurofins Carlsbad** 

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# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-3779-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

#### **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-22-25	06-30-23
The following analytes the agency does not of	• •	it the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes fo
Analysis Method	Prep Method	Matrix	Analyte	
8015 NM		Solid	Total TPH	

### **Method Summary**

Client: Ensolum

Method

8021B

Total BTEX

8015 NM

8015B NM

Project/Site: PLU 25 Brushy Draw 901H

**Method Description** 

Total BTEX Calculation

Volatile Organic Compounds (GC)

Diesel Range Organics (DRO) (GC)

Diesel Range Organics (DRO) (GC)

Job ID: 890-3779-1

SDG: 03C1558155

Protocol	Laboratory
SW846	EET MID
TAL SOP	EET MID
SW846	EET MID
SW846	EET MID
MCAWW	EET MID

**EET MID** 

EET MID

**EET MID** 

SW846

SW846

ASTM

300.0 Anions, Ion Chromatography 5035 Closed System Purge and Trap 8015NM Prep Microextraction DI Leach **Deionized Water Leaching Procedure** 

#### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

# **Sample Summary**

Client: Ensolum

Job ID: 890-3779-1 Project/Site: PLU 25 Brushy Draw 901H

SDG: 03C1558155

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3779-1	SS07	Solid	01/06/23 10:20	01/06/23 13:17	0.5'

Circle Method(

eurofins 🔅

Xenco **Environment Testing** 

Chain of Custody

Work Order No:

				w Z	1-6-23	1	roale Shi	1000	7	Moune
	Date/Time	Received by: (Signature)	Relinquished by: (Signature)		Date/Time		Received by: (Signature)	Received by	iture)	Relinquished by: (Signature)
		ns ol gotlated.	vitice: 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 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 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.	filiates and subcontr the client if such loss ut not analyzed. The	rofins Xenco, its af enses incurred by the Eurofins Xenco, b	client company to Eu y for any losses or expo h sample submitted to	alld purchase order from ssume any responsibilit d a charge of \$5 for eac	les constitutes a va oles and shall not a to each project an	nd relinquishment of samp le only for the cost of samp e of \$85.00 will be applied	vitice: 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 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 beyon a confirmation of 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 beyon a confirmation of the confir
	J V Zn /7471	Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471	Co Cu Fe Pb Mg u Pb Mn Mo Ni Se	Be B Cd Ca Cr a Be Cd Cr Co C	b As Ba Be Sb As Ba E	Texas 11 Al Sb 3010 : 8RCRA St	8RCRA 13PPM Texas 11 TCLP / SPLP 6010 : 8R		200.8 / 6020: letal(s) to be ana	Total 200.7 / 6010 200.8 / 6020: ircle Method(s) and Metal(s) to be analyzed
					+					1
									\	
	606621001	lel								
	r Center	Cost								
	PPP2252531825	OAPP		- The						
	nuclent #	Indic		X	X	0.5161	1020	1/6/23	S	SSOT
ane 1	Sample Comments	Sai		Chi	BT	Depth Grab/ # of Comp Cont	Time De	Date Sampled	on Matrix	Sample Identification
	NaOH+Ascorbic Acid: SAPC	NaCH+A				1	emperature:	Corrected Temperature		Total Containers:
	Zn Acetate+NaOH: Zn	Zn Aceta	890-3779 Chain of Custody	id	(	W. 12	e Reading:	Temperature Reading:	Yes No N/A	Sample Custody Seals:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		es		i)		Correction Factor:	Yes No (V)	Cooler Custody Seals:
	*: NABIS	NaHSO 4: NABIS				207 DOT	1	Thermometer ID:	(Yes) No	Samples Received Intact:
	+	H <sub>3</sub> PO <sub>4</sub> : HP				(Yes No	Wet Ice:	(Tes No	Temp Blank:	SAMPLE RECEIPT
	1 <sub>2</sub> NaOH: Na	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>				L	the lab, if received by 4:30pm			PO #:
		HCL: HC				eceived by	TAT starts the day received by	oberts	Marchith Roberts	Sampler's Name:
	_	Cool: Cool					Due Date:		32.10185, 703.84166	Project Location: 32
	O DI Water: H <sub>2</sub> O	None: NO				Rush Code	Routine	Oi .	0301558155	Project Number:
	Preservative Codes	Pre	ANALYSIS REQUEST			nd	1 Turn Around	Draw 90	PLU 25 Brushy Draw 90/1+	Project Name:
	Calei	ADAPT L	Deliverables:	tmerrissey enselven. com	scy@e	tmerris	Email:	307	337-257-6307	Phone:
	Othor	,	00000	Pad NM	Lardsbad	City, State ZIP:	CELLO CITA		V PRASLIE	City, State ZIP:
	TRRP Level IV	Reporting: Level II     Level III   PST/UST   TRRP   Level IV	00000		2				- 1	

City, State ZIP: Address: Project Manager:

Tacoma

MOMSSCY

Company Name:

3122 Nat'1

Parks

88220 Hwy

Company Name: Bill to: (if different)

3122 Nat 1

Reporting: Level III 🔲 Level III 🔲 PST/UST 📗 TRRP 🗌

Level IV

UST/PST PRP Brownfields

RRC

Superfund [

Work Order Comments

www.xenco.com

State of Project: Program:

Darrett. (10

Green

Revised Date: 08/25/2020 Rev. 2020.2

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3779-1 SDG Number: 03C1558155

Login Number: 3779 List Source: Eurofins Carlsbad

List Number: 1 Creator: Stutzman, Amanda

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 Nu

Job Number: 890-3779-1 SDG Number: 03C1558155

Login Number: 3779
List Source: Eurofins Midland
List Number: 2
List Creation: 01/09/23 08:26 AM

Creator: Rodriguez, Leticia

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	N/A	

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<6mm (1/4").

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 1/30/2023 9:49:24 AM

# **JOB DESCRIPTION**

PLU 25 BRUSHY DRAW 901H SDG NUMBER 03C1558155

# **JOB NUMBER**

890-3865-1

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 1/30/2023 9:49:24 AM

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

Client: Ensolum Laboratory Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H

SDG: 03C1558155

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

#### **Qualifiers**

GC VOA	
Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

S1-Surrogate recovery exceeds control limits, low biased. S1+ Surrogate recovery exceeds control limits, high biased.

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
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.
LIDL C/IC	

#### 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

RL

RPD

Ciossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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)

Relative Percent Difference, a measure of the relative difference between two points

**Eurofins Carlsbad** 

Reporting Limit or Requested Limit (Radiochemistry)

# **Definitions/Glossary**

 Client: Ensolum
 Job ID: 890-3865-1

 Project/Site: PLU 25 BRUSHY DRAW 901H
 SDG: 03C1558155

### **Glossary (Continued)**

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

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: PLU 25 BRUSHY DRAW 901H

Job ID: 890-3865-1

SDG: 03C1558155

Job ID: 890-3865-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3865-1

#### Receipt

The samples were received on 1/16/2023 8:46 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 4.2°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-3865-1), FS02 (890-3865-2), FS03 (890-3865-3), FS04 (890-3865-4), FS05 (890-3865-5), FS06 (890-3865-6), FS07 (890-3865-7), SW01 (890-3865-8) and SW02 (890-3865-9).

#### GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: (LCS 880-44333/1-A) and (LCSD 880-44333/2-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SW02 (890-3865-9). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-44333 and analytical batch 880-44315 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike (MS) was within acceptance limits and may be used to evaluate matrix performance.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-44333 and analytical batch 880-44315 was outside control limits. Sample matrix interference and/or non-homogeneity is suspected.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-44342 and analytical batch 880-44418 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 880-44318 and analytical batch 880-44899 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: Surrogate recovery for the following samples were outside control limits: FS04 (890-3865-4), FS05 (890-3865-5), (LCS 880-44318/2-A), (MB 880-44318/1-A), (880-23716-A-1-E), (880-23716-A-1-F MS) and (880-23716-A-1-G MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (890-3867-A-1-E MS) and (890-3867-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: FS06 (890-3865-6), FS07 (890-3865-7) and SW01 (890-3865-8). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-44245 and 880-44245 and analytical batch 880-44498 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

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#### **Case Narrative**

 Client: Ensolum
 Job ID: 890-3865-1

 Project/Site: PLU 25 BRUSHY DRAW 901H
 SDG: 03C1558155

Job ID: 890-3865-1 (Continued)

**Laboratory: Eurofins Carlsbad (Continued)** 

acceptance limits.

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

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Lab Sample ID: 890-3865-1

 Client: Ensolum
 Job ID: 890-3865-1

 Project/Site: PLU 25 BRUSHY DRAW 901H
 SDG: 03C1558155

Client Sample ID: FS01

Date Collected: 01/13/23 13:35 Date Received: 01/16/23 08:46

Sample Depth: 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F2 F1 *-	0.00200	mg/Kg		01/19/23 12:58	01/19/23 22:14	1
Toluene	<0.00200	U F2 F1	0.00200	mg/Kg		01/19/23 12:58	01/19/23 22:14	1
Ethylbenzene	<0.00200	U F2 F1	0.00200	mg/Kg		01/19/23 12:58	01/19/23 22:14	1
m-Xylene & p-Xylene	<0.00401	U *+ F2 F1	0.00401	mg/Kg		01/19/23 12:58	01/19/23 22:14	1
o-Xylene	<0.00200	U *+ F2 F1	0.00200	mg/Kg		01/19/23 12:58	01/19/23 22:14	1
Xylenes, Total	<0.00401	U *+ F2 F1	0.00401	mg/Kg		01/19/23 12:58	01/19/23 22:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130			01/19/23 12:58	01/19/23 22:14	1
1,4-Difluorobenzene (Surr)	80		70 - 130			01/19/23 12:58	01/19/23 22:14	1
- Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			01/20/23 14:02	1
- Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (G	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	150		49.9	mg/Kg			01/30/23 09:56	1
- Method: SW846 8015B NM - Dies	sel Range Orga	nics (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		01/19/23 10:32	01/28/23 09:59	1
Diesel Range Organics (Over C10-C28)	150		49.9	mg/Kg		01/19/23 10:32	01/28/23 09:59	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/19/23 10:32	01/28/23 09:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	92		70 - 130			01/19/23 10:32	01/28/23 09:59	1
o-Terphenyl	97		70 - 130			01/19/23 10:32	01/28/23 09:59	1
-	. Ion Chromoto	aranhu Ca	lubla					
Method: MCAWW 300.0 - Anions	s, ion Unromate	grapny - So	luble					

**Client Sample ID: FS02** 

Date Collected: 01/13/23 13:40

Date Received: 01/16/23 08:46

Sample Depth: 2

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		01/19/23 13:17	01/21/23 18:45	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/19/23 13:17	01/21/23 18:45	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/19/23 13:17	01/21/23 18:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/19/23 13:17	01/21/23 18:45	1
o-Xylene	0.00514		0.00199	mg/Kg		01/19/23 13:17	01/21/23 18:45	1
Xylenes, Total	0.00514		0.00398	mg/Kg		01/19/23 13:17	01/21/23 18:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130			01/19/23 13:17	01/21/23 18:45	1

25.3

mg/Kg

2140 F1

**Eurofins Carlsbad** 

01/20/23 17:49

Lab Sample ID: 890-3865-2

**Matrix: Solid** 

2

3

4

6

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10

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Client: Ensolum

Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

**Client Sample ID: FS02** Lab Sample ID: 890-3865-2

Date Collected: 01/13/23 13:40 Matrix: Solid Date Received: 01/16/23 08:46

Sample Depth: 2

Method: SW846 8021B -	Volatile Organic Compounds	(GC)	(Continued)	
monioa. Ottogo ocz ib	voiding Organic Compounds	100,	(Oontiniaca)	

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	121	70 - 130	01/19/23 13:17	01/21/23 18:45	

Method: TAL SOP Total BTEX -	Total BTEX Calculation						
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00514	0.00398	mg/Kg			01/23/23 12:52	1

Method: SW846 8015 NM - Diesel R	ange Organics (DRO)	(GC)					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	266	50.0	mg/Kg			01/30/23 09:56	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/19/23 10:32	01/28/23 10:20	1
Diesel Range Organics (Over C10-C28)	214		50.0	mg/Kg		01/19/23 10:32	01/28/23 10:20	1
Oll Range Organics (Over C28-C36)	51.6		50.0	mg/Kg		01/19/23 10:32	01/28/23 10:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	01/19/23 10:32	01/28/23 10:20	1
o-Terphenyl	109		70 - 130	01/19/23 10:32	01/28/23 10:20	1

Method: MCAWW 300.0 - Anions, I	on Chromatography - Solu	ible					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1390	24.9	mg/Kg			01/20/23 18:06	5

Lab Sample ID: 890-3865-3 **Client Sample ID: FS03** 

Date Collected: 01/13/23 13:45 **Matrix: Solid** Date Received: 01/16/23 08:46

Sample Depth: 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *-	0.00199	mg/Kg		01/19/23 12:58	01/19/23 22:55	1
Toluene	0.00256		0.00199	mg/Kg		01/19/23 12:58	01/19/23 22:55	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/19/23 12:58	01/19/23 22:55	1
m-Xylene & p-Xylene	<0.00398	U *+	0.00398	mg/Kg		01/19/23 12:58	01/19/23 22:55	1
o-Xylene	<0.00199	U *+	0.00199	mg/Kg		01/19/23 12:58	01/19/23 22:55	1
Xylenes, Total	<0.00398	U *+	0.00398	mg/Kg		01/19/23 12:58	01/19/23 22:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			01/19/23 12:58	01/19/23 22:55	1
1,4-Difluorobenzene (Surr)	91		70 - 130			01/19/23 12:58	01/19/23 22:55	1

Method: TAL SOP Total BTEX - Total	I BTEX Calc	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			01/20/23 14:02	1

Lab Sample ID: 890-3865-3

Job ID: 890-3865-1

Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

**Client Sample ID: FS03** 

Date Collected: 01/13/23 13:45 Date Received: 01/16/23 08:46

Sample Depth: 2

Method: SW846 8015 NM - Diesel F	Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	64.1		49.9	mg/Kg			01/30/23 09:56	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9	mg/Kg		01/19/23 10:32	01/28/23 10:44	1
(GRO)-C6-C10								
Diesel Range Organics (Over	64.1		49.9	mg/Kg		01/19/23 10:32	01/28/23 10:44	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/19/23 10:32	01/28/23 10:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130			01/19/23 10:32	01/28/23 10:44	1
o-Terphenvl	72		70 - 130			01/19/23 10:32	01/28/23 10:44	1

Method	MCAWW 300.0 - Anions, Ion Chroma	tography -	Soluble					
Analyte	Res	ılt Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41	10	25.0	mg/Kg			01/20/23 18:12	5

Client Sample ID: FS04 Lab Sample ID: 890-3865-4 Date Collected: 01/13/23 13:50 **Matrix: Solid** 

Date Received: 01/16/23 08:46

Sample Depth: 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *-	0.00200	mg/Kg		01/19/23 12:58	01/19/23 23:15	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/19/23 23:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/19/23 23:15	1
m-Xylene & p-Xylene	<0.00399	U *+	0.00399	mg/Kg		01/19/23 12:58	01/19/23 23:15	1
o-Xylene	<0.00200	U *+	0.00200	mg/Kg		01/19/23 12:58	01/19/23 23:15	1
Xylenes, Total	<0.00399	U *+	0.00399	mg/Kg		01/19/23 12:58	01/19/23 23:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			01/19/23 12:58	01/19/23 23:15	1
1,4-Difluorobenzene (Surr)	102		70 - 130			01/19/23 12:58	01/19/23 23:15	1
Method: TAL SOP Total BTEX - 7			RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: TAL SOP Total BTEX - 1 Analyte		culation Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Total BTEX	Result   <0.00399	<b>Qualifier</b> U	0.00399	<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared	Analyzed 01/20/23 14:02	Dil Fac
Analyte Total BTEX  Method: SW846 8015 NM - Diese	Result <0.00399	Qualifier U	0.00399 GC)	mg/Kg			01/20/23 14:02	
Analyte Total BTEX	Result <0.00399	<b>Qualifier</b> U	0.00399 GC)		<u>D</u>	Prepared Prepared		1
Analyte Total BTEX  Method: SW846 8015 NM - Diese	Result <0.00399	Qualifier U	0.00399 GC)	mg/Kg			01/20/23 14:02	1
Analyte Total BTEX  Method: SW846 8015 NM - Diese Analyte	Result <a href="#">&lt;0.00399</a> Pl Range Organ Result 72.7	Qualifier U ics (DRO) ( Qualifier	0.00399  GC)  RL  49.9	mg/Kg			01/20/23 14:02  Analyzed	1
Analyte Total BTEX  Method: SW846 8015 NM - Diese Analyte Total TPH	Result <0.00399 el Range Organ Result 72.7 sel Range Orga	Qualifier U ics (DRO) ( Qualifier	0.00399  GC)  RL  49.9	mg/Kg			01/20/23 14:02  Analyzed	Dil Fac
Analyte Total BTEX  Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese	Result <0.00399 el Range Organ Result 72.7 sel Range Orga	Qualifier U ics (DRO) (Qualifier nics (DRO) Qualifier	0.00399  GC)  RL 49.9	mg/Kg  Unit  mg/Kg	<u>D</u>	Prepared	01/20/23 14:02  Analyzed  01/30/23 09:56	Dil Fac
Analyte Total BTEX  Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics	Result <0.00399  El Range Organ Result 72.7  sel Range Orga Result	Qualifier U ics (DRO) (Qualifier nics (DRO) Qualifier	0.00399  GC)  RL  49.9  (GC)  RL	mg/Kg  Unit  mg/Kg  Unit	<u>D</u>	Prepared Prepared	01/20/23 14:02  Analyzed  01/30/23 09:56  Analyzed	

Lab Sample ID: 890-3865-4

Client: Ensolum Job ID: 890-3865-1

Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

Date Collected: 01/13/23 13:50 Date Received: 01/16/23 08:46

**Client Sample ID: FS04** 

Sample Depth: 2

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1-Chlorooctane	45	S1-	70 - 130	01/19/23 10:32	01/28/23 11:08	1
L	o-Terphenyl	43	S1-	70 - 130	01/19/23 10:32	01/28/23 11:08	1

Method: MCAWW 300.0 - Anions, I	Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble										
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Chloride	3810		24.9	mg/Kg			01/20/23 18:18	5			

**Client Sample ID: FS05** Lab Sample ID: 890-3865-5 Date Collected: 01/13/23 13:55 **Matrix: Solid** 

Date Received: 01/16/23 08:46

Sample Depth: 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U *-	0.00201	mg/Kg		01/19/23 12:58	01/19/23 23:36	
Toluene	<0.00201	U	0.00201	mg/Kg		01/19/23 12:58	01/19/23 23:36	
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/19/23 12:58	01/19/23 23:36	
m-Xylene & p-Xylene	<0.00402	U *+	0.00402	mg/Kg		01/19/23 12:58	01/19/23 23:36	
o-Xylene	< 0.00199	U	0.00199	mg/Kg		01/19/23 16:39	01/20/23 15:37	
Xylenes, Total	<0.00402	U *+	0.00402	mg/Kg		01/19/23 12:58	01/19/23 23:36	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	109		70 - 130			01/19/23 12:58	01/19/23 23:36	-
1,4-Difluorobenzene (Surr)	96		70 - 130			01/19/23 12:58	01/19/23 23:36	
- Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00402	U	0.00402	mg/Kg			01/20/23 14:02	
Analyte Total TPH	Result 97.2	Qualifier	<b>RL</b> 50.0	Unit mg/Kg	D	Prepared	Analyzed	Dil Fa
	37.2		00.0				01/30/23 09:56	
				9/1.9			01/30/23 09:56	
Method: SW846 8015B NM - Dies			(GC)	99			01/30/23 09:56	
Analyte	Result	Qualifier	(GC)	Unit	<u>D</u>	Prepared	01/30/23 09:56  Analyzed	
		Qualifier	•		<u>D</u>	Prepared 01/19/23 10:32		Dil Fac
Analyte Gasoline Range Organics	Result	Qualifier	RL	Unit	<u>D</u>		Analyzed	Dil Fac
Analyte  Gasoline Range Organics (GRO)-C6-C10  Diesel Range Organics (Over	Result   <50.0	Qualifier U	RL 50.0	<mark>Unit</mark> mg/Kg	<u> </u>	01/19/23 10:32	<b>Analyzed</b> 01/28/23 11:32	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <50.0 97.2	Qualifier U	FL 50.0	unit mg/Kg mg/Kg	<u>D</u>	01/19/23 10:32	Analyzed 01/28/23 11:32 01/28/23 11:32	Dil Fa
Analyte  Gasoline Range Organics (GRO)-C6-C10  Diesel Range Organics (Over C10-C28)  Oll Range Organics (Over C28-C36)	Result   <50.0   97.2   <50.0   %Recovery	Qualifier U  Qualifier	RL 50.0 50.0 50.0	unit mg/Kg mg/Kg	<u> </u>	01/19/23 10:32 01/19/23 10:32 01/19/23 10:32	Analyzed 01/28/23 11:32 01/28/23 11:32 01/28/23 11:32	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	Result	Qualifier U  Qualifier	50.0 50.0 50.0 Limits	unit mg/Kg mg/Kg	<u>D</u>	01/19/23 10:32 01/19/23 10:32 01/19/23 10:32 Prepared	Analyzed 01/28/23 11:32 01/28/23 11:32 01/28/23 11:32 Analyzed	Dil Fa
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result	Qualifier U  Qualifier S1- S1-	RL 50.0 50.0 50.0 <b>Limits</b> 70 - 130 70 - 130	unit mg/Kg mg/Kg	<u>D</u>	01/19/23 10:32 01/19/23 10:32 01/19/23 10:32 Prepared 01/19/23 10:32	Analyzed 01/28/23 11:32 01/28/23 11:32 01/28/23 11:32  Analyzed 01/28/23 11:32	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result	Qualifier U  Qualifier S1- S1-	RL 50.0 50.0 50.0 <b>Limits</b> 70 - 130 70 - 130	unit mg/Kg mg/Kg	<u>D</u>	01/19/23 10:32 01/19/23 10:32 01/19/23 10:32 Prepared 01/19/23 10:32	Analyzed 01/28/23 11:32 01/28/23 11:32 01/28/23 11:32  Analyzed 01/28/23 11:32	Dil Fac

Lab Sample ID: 890-3865-6

Job ID: 890-3865-1

Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

**Client Sample ID: FS06** 

Date Collected: 01/13/23 14:00 Date Received: 01/16/23 08:46

Sample Depth: 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U *-	0.00202	mg/Kg		01/19/23 12:58	01/19/23 23:56	1
Toluene	<0.00202	U	0.00202	mg/Kg		01/19/23 12:58	01/19/23 23:56	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		01/19/23 12:58	01/19/23 23:56	1
m-Xylene & p-Xylene	<0.00404	U *+	0.00404	mg/Kg		01/19/23 12:58	01/19/23 23:56	1
o-Xylene	<0.00202	U *+	0.00202	mg/Kg		01/19/23 12:58	01/19/23 23:56	1
Xylenes, Total	<0.00404	U *+	0.00404	mg/Kg		01/19/23 12:58	01/19/23 23:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130			01/19/23 12:58	01/19/23 23:56	1
1,4-Difluorobenzene (Surr)	101		70 - 130			01/19/23 12:58	01/19/23 23:56	1
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			01/20/23 14:02	1
Analyte		Qualifier	RL 50.0	Unit (1/2)	<u>D</u>	Prepared	Analyzed	Dil Fac
Total TPH	118		50.0	mg/Kg			04/00/00 40:00	
Made at OWO 40 CO4ED NO.							01/30/23 10:23	1
Method: SW846 8015B NM - Die	sel Range Orga	nics (DRO)	(GC)				01/30/23 10:23	1
		nics (DRO) Qualifier	(GC)	Unit	D	Prepared	Analyzed	
5 5		Qualifier		Unit mg/Kg	<u>D</u>	Prepared 01/19/23 10:36		Dil Fac
Analyte Gasoline Range Organics	Result	Qualifier	RL		<u>D</u>	<u>.</u>	Analyzed	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result   <50.0	Qualifier U	<b>RL</b> 50.0	mg/Kg	<u>D</u>	01/19/23 10:36	Analyzed 01/28/23 21:03	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <50.0	Qualifier U	<b>RL</b> 50.0	mg/Kg	<u>D</u>	01/19/23 10:36	Analyzed 01/28/23 21:03 01/28/23 21:03	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0 118 <50.0	Qualifier U	RL 50.0 50.0 50.0	mg/Kg	<u>D</u>	01/19/23 10:36 01/19/23 10:36 01/19/23 10:36	Analyzed 01/28/23 21:03 01/28/23 21:03 01/28/23 21:03	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	Result   <50.0   118   <50.0   %Recovery	Qualifier U  Qualifier	50.0 50.0 50.0 <i>Limits</i>	mg/Kg	<u>D</u>	01/19/23 10:36 01/19/23 10:36 01/19/23 10:36 Prepared	Analyzed 01/28/23 21:03 01/28/23 21:03 01/28/23 21:03 Analyzed	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <50.0   118   <50.0     %Recovery   53   48	Qualifier  U  Qualifier  S1- S1-	RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg	<u>D</u>	01/19/23 10:36 01/19/23 10:36 01/19/23 10:36 Prepared 01/19/23 10:36	Analyzed 01/28/23 21:03 01/28/23 21:03 01/28/23 21:03 Analyzed 01/28/23 21:03	1 Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result	Qualifier  U  Qualifier  S1- S1-	RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg	D_	01/19/23 10:36 01/19/23 10:36 01/19/23 10:36 Prepared 01/19/23 10:36	Analyzed 01/28/23 21:03 01/28/23 21:03 01/28/23 21:03 Analyzed 01/28/23 21:03	Dil Fac

**Client Sample ID: FS07** 

Date Collected: 01/13/23 14:05

Date Received: 01/16/23 08:46

Sample Depth: 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *-	0.00199	mg/Kg		01/19/23 12:58	01/20/23 00:17	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/19/23 12:58	01/20/23 00:17	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/19/23 12:58	01/20/23 00:17	1
m-Xylene & p-Xylene	<0.00398	U *+	0.00398	mg/Kg		01/19/23 12:58	01/20/23 00:17	1
o-Xylene	< 0.00199	U *+	0.00199	mg/Kg		01/19/23 12:58	01/20/23 00:17	1
Xylenes, Total	<0.00398	U *+	0.00398	mg/Kg		01/19/23 12:58	01/20/23 00:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130			01/19/23 12:58	01/20/23 00:17	1

**Eurofins Carlsbad** 

Lab Sample ID: 890-3865-7

**Matrix: Solid** 

Lab Sample ID: 890-3865-7

Job ID: 890-3865-1

Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

Client Sample ID: FS07 Date Collected: 01/13/23 14:05

Date Received: 01/16/23 08:46 Sample Depth: 2

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

%Recovery Qualifier Limits Prepared Surrogate Analyzed Dil Fac 70 - 130 01/19/23 12:58 1,4-Difluorobenzene (Surr) 98 01/20/23 00:17

**Method: TAL SOP Total BTEX - Total BTEX Calculation** 

Analyte Result Qualifier RL Unit D Analyzed Dil Fac Prepared Total BTEX <0.00398 0.00398 01/20/23 14:02 mg/Kg

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

Result Qualifier RL Unit D Prepared Analyzed Dil Fac **Total TPH** 49.9 mg/Kg 01/30/23 10:23 191

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

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac <49.9 U 01/19/23 10:36 01/28/23 21:30 Gasoline Range Organics 49.9 mg/Kg (GRO)-C6-C10 49.9 mg/Kg 01/19/23 10:36 01/28/23 21:30 **Diesel Range Organics (Over** 191 C10-C28) OII Range Organics (Over C28-C36) <49.9 U 49.9 mg/Kg 01/19/23 10:36 01/28/23 21:30

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1-Chlorooctane 68 S1-70 - 130 01/19/23 10:36 01/28/23 21:30 61 S1-70 - 130 01/19/23 10:36 01/28/23 21:30 o-Terphenyl

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac 25.1 01/20/23 18:47 Chloride 1960 mg/Kg

Lab Sample ID: 890-3865-8 Client Sample ID: SW01

Date Collected: 01/13/23 13:25 Date Received: 01/16/23 08:46

Sample Depth: 0 - 2

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

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Benzene <0.00199 U \*-0.00199 mg/Kg 01/19/23 12:58 01/20/23 00:37 Toluene <0.00199 0.00199 01/19/23 12:58 01/20/23 00:37 mg/Kg Ethylbenzene <0.00199 U 0.00199 01/19/23 12:58 01/20/23 00:37 mg/Kg 01/20/23 00:37 m-Xylene & p-Xylene <0.00398 U\*+ 0.00398 01/19/23 12:58 mg/Kg o-Xylene <0.00199 U\*+ 0.00199 mg/Kg 01/19/23 12:58 01/20/23 00:37 Xylenes, Total <0.00398 U\*+ 0.00398 mg/Kg 01/19/23 12:58 01/20/23 00:37 %Recovery Qualifier Limits Dil Fac Surrogate Prepared Analyzed

70 - 130 01/19/23 12:58 4-Bromofluorobenzene (Surr) 100 01/20/23 00:37 1,4-Difluorobenzene (Surr) 90 70 - 130 01/19/23 12:58 01/20/23 00:37

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte Result Qualifier RL D Unit Prepared Analyzed Dil Fac Total BTEX <0.00398 0.00398 01/20/23 14:02 mg/Kg

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

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac **Total TPH** 49.9 mg/Kg 01/30/23 10:23 119

**Eurofins Carlsbad** 

**Matrix: Solid** 

Job ID: 890-3865-1 SDG: 03C1558155

Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H

> Lab Sample ID: 890-3865-8 Matrix: Solid

Date Collected: 01/13/23 13:25 Date Received: 01/16/23 08:46

Sample Depth: 0 - 2

**Client Sample ID: SW01** 

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9	mg/Kg		01/19/23 10:36	01/28/23 21:55	1
(GRO)-C6-C10								
Diesel Range Organics (Over	119		49.9	mg/Kg		01/19/23 10:36	01/28/23 21:55	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/19/23 10:36	01/28/23 21:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130			01/19/23 10:36	01/28/23 21:55	1
o-Terphenyl	64	S1-	70 - 130			01/19/23 10:36	01/28/23 21:55	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - S	oluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

**Client Sample ID: SW02** Lab Sample ID: 890-3865-9 Matrix: Solid

Date Collected: 01/13/23 13:30

Date Received: 01/16/23 08:46

Sample Depth: 0 - 2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *-	0.00200	mg/Kg		01/19/23 12:58	01/20/23 00:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/20/23 00:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/20/23 00:57	1
m-Xylene & p-Xylene	<0.00399	U *+	0.00399	mg/Kg		01/19/23 12:58	01/20/23 00:57	1
o-Xylene	<0.00200	U *+	0.00200	mg/Kg		01/19/23 12:58	01/20/23 00:57	1
Xylenes, Total	<0.00399	U *+	0.00399	mg/Kg		01/19/23 12:58	01/20/23 00:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130			01/19/23 12:58	01/20/23 00:57	1
1,4-Difluorobenzene (Surr)	67	S1-	70 - 130			01/19/23 12:58	01/20/23 00:57	1
Method: TAL SOP Total BTEX - T	otal BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			01/20/23 14:02	1
Method: SW846 8015 NM - Diese	l Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	101		50.0	mg/Kg			01/30/23 10:23	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (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		01/19/23 10:36	01/28/23 22:17	1
Diesel Range Organics (Over C10-C28)	101		50.0	mg/Kg		01/19/23 10:36	01/28/23 22:17	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/19/23 10:36	01/28/23 22:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			01/19/23 10:36	01/28/23 22:17	1
o-Terphenyl	93		70 - 130			01/19/23 10:36	01/28/23 22:17	

# **Client Sample Results**

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

**Client Sample ID: SW02** Lab Sample ID: 890-3865-9 Matrix: Solid

Date Collected: 01/13/23 13:30 Date Received: 01/16/23 08:46

Sample Depth: 0 - 2

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble									
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	3580		25.0	mg/Kg			01/20/23 18:59	5

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate R	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)		
880-23720-A-61-G MS	Matrix Spike	98	113		
880-23720-A-61-H MSD	Matrix Spike Duplicate	101	112		
880-23936-A-1-A MS	Matrix Spike	97	114		
880-23936-A-1-B MSD	Matrix Spike Duplicate	95	114		
390-3865-1	FS01	120	80		
890-3865-1 MS	FS01	120	99		
890-3865-1 MSD	FS01	122	90		
390-3865-2	FS02	91	121		
390-3865-3	FS03	105	91		
390-3865-4	FS04	111	102		
390-3865-5	FS05	109	96		
390-3865-6	FS06	110	101		
390-3865-7	FS07	108	98		
390-3865-8	SW01	100	90		
390-3865-9	SW02	94	67 S1-		
LCS 880-44333/1-A	Lab Control Sample	137 S1+	93		
LCS 880-44342/1-A	Lab Control Sample	96	114		
LCS 880-44393/1-A	Lab Control Sample	97	113		
LCSD 880-44333/2-A	Lab Control Sample Dup	165 S1+	110		
LCSD 880-44342/2-A	Lab Control Sample Dup	96	115		
LCSD 880-44393/2-A	Lab Control Sample Dup	92	111		
MB 880-44233/5-A	Method Blank	86	89		
MB 880-44333/5-A	Method Blank	87	86		
MB 880-44340/5-A	Method Blank	97	112		
MB 880-44342/5-A	Method Blank	95	111		
MB 880-44393/5-A	Method Blank	95	110		
VID 000-14030/0-71	Wethod Blank	30	110		

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
b Sample ID	Client Sample ID	(70-130)	(70-130)	
0-23716-A-1-F MS	Matrix Spike	20 S1-	12 S1-	
-23716-A-1-G MSD	Matrix Spike Duplicate	59 S1-	55 S1-	
)-3865-1	FS01	92	97	
)-3865-2	FS02	98	109	
)-3865-3	FS03	70	72	
-3865-4	FS04	45 S1-	43 S1-	
3865-5	FS05	39 S1-	36 S1-	
-3865-6	FS06	53 S1-	48 S1-	
)-3865-7	FS07	68 S1-	61 S1-	
-3865-8	SW01	72	64 S1-	
-3865-9	SW02	96	93	
-3867-A-1-E MS	Matrix Spike	81	69 S1-	
-3867-A-1-F MSD	Matrix Spike Duplicate	79	67 S1-	

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
LCS 880-44318/2-A	Lab Control Sample	124	133 S1+	
LCS 880-44319/2-A	Lab Control Sample	108	109	
LCSD 880-44318/3-A	Lab Control Sample Dup	106	114	
LCSD 880-44319/3-A	Lab Control Sample Dup	105	106	
MB 880-44318/1-A	Method Blank	163 S1+	180 S1+	
MB 880-44319/1-A	Method Blank	112	113	
Surrogate Legend				

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3865-1 SDG: 03C1558155 Project/Site: PLU 25 BRUSHY DRAW 901H

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-44233/5-A

**Matrix: Solid** 

Analysis Batch: 44315

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44233

ı		MB	MB						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	<0.00200	U	0.00200	mg/Kg		01/18/23 10:19	01/19/23 11:18	1
I	Toluene	<0.00200	U	0.00200	mg/Kg		01/18/23 10:19	01/19/23 11:18	1
	Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/18/23 10:19	01/19/23 11:18	1
I	m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/18/23 10:19	01/19/23 11:18	1
	o-Xylene	<0.00200	U	0.00200	mg/Kg		01/18/23 10:19	01/19/23 11:18	1
	Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		01/18/23 10:19	01/19/23 11:18	1
ı									

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	l Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	01/18/23 10	:19 01/19/23 11:18	1
1,4-Difluorobenzene (Surr)	89		70 - 130	01/18/23 10	:19 01/19/23 11:18	1

Lab Sample ID: MB 880-44333/5-A

Matrix: Solid

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44333

Analysis Batch: 44315

	INID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/19/23 21:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/19/23 21:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/19/23 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/19/23 12:58	01/19/23 21:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/19/23 12:58	01/19/23 21:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/19/23 12:58	01/19/23 21:53	1

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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130	01/19/23 12:58	01/19/23 21:53	1
1,4-Difluorobenzene (Surr)	86		70 - 130	01/19/23 12:58	01/19/23 21:53	1

Lab Sample ID: LCS 880-44333/1-A

**Matrix: Solid** 

Analysis Batch: 44315

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 44333

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.06882	*-	mg/Kg		69	70 - 130	
Toluene	0.100	0.09131		mg/Kg		91	70 - 130	
Ethylbenzene	0.100	0.09719		mg/Kg		97	70 - 130	
m-Xylene & p-Xylene	0.200	0.2212		mg/Kg		111	70 - 130	
o-Xylene	0.100	0.1242		mg/Kg		124	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	137	S1+	70 - 130
1.4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-44333/2-A

Matrix: Solid

Analysis Batch: 44315

Client Sample	ID: Lab Control	Sample Dup
	Dunin Ti	T-4-1/NIA

Prep Type: Total/NA

Prep Batch: 44333

	<b>Spike</b>	LCSD LCS	ຣບ			%Rec		RPD
Analyte	Added	Result Qua	alifier Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08647	mg/Kg		86	70 - 130	23	35

### QC Sample Results

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

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

Lab Sample ID: LCSD 880-44333/2-A

**Matrix: Solid** 

Analysis Batch: 44315

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 44333

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.100	0.1174		mg/Kg		117	70 - 130	25	35
Ethylbenzene	0.100	0.1280		mg/Kg		128	70 - 130	27	35
m-Xylene & p-Xylene	0.200	0.2911	*+	mg/Kg		146	70 - 130	27	35
o-Xylene	0.100	0.1638	*+	mg/Kg		164	70 - 130	28	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	165	S1+	70 _ 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: 890-3865-1 MS

**Matrix: Solid** 

Analysis Batch: 44315

**Client Sample ID: FS01** Prep Type: Total/NA

Prep Batch: 44333

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U F2 F1 *-	0.0998	0.07474		mg/Kg		75	70 - 130	
Toluene	<0.00200	U F2 F1	0.0998	0.07789		mg/Kg		78	70 - 130	
Ethylbenzene	<0.00200	U F2 F1	0.0998	0.07101		mg/Kg		71	70 - 130	
m-Xylene & p-Xylene	<0.00401	U *+ F2 F1	0.200	0.1430		mg/Kg		72	70 - 130	
o-Xylene	<0.00200	U *+ F2 F1	0.0998	0.08377		mg/Kg		84	70 - 130	

MS MS

Surrogate	%Recovery Qualifi	er Limits
4-Bromofluorobenzene (Surr)	120	70 - 130
1 4-Difluorobenzene (Surr)	99	70 - 130

Lab Sample ID: 890-3865-1 MSD

**Matrix: Solid** 

Analysis Batch: 44315

**Client Sample ID: FS01** Prep Type: Total/NA

Prep Batch: 44333

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits RPD Limit Benzene <0.00200 U F2 F1 \*-0.101 0.03198 F2 F1 mg/Kg 32 70 - 130 80 35 Toluene <0.00200 U F2 F1 0.101 0.04712 F2 F1 47 70 - 130 35 mg/Kg 49 Ethylbenzene <0.00200 U F2 F1 0.101 0.04000 F2 F1 mg/Kg 40 70 - 130 56 35 m-Xylene & p-Xylene <0.00401 U\*+ F2 0.202 0.07735 F2 F1 mg/Kg 38 70 - 130 60 35 F1 <0.00200 U\*+ F2 0.101 0.05148 F2 F1 70 - 130 o-Xylene mg/Kg F1

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	122	70 - 130
1,4-Difluorobenzene (Surr)	90	70 - 130

Lab Sample ID: MB 880-44340/5-A

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44340

MB MB

Analyte Result Qualifier RLUnit Prepared Analyzed Dil Fac Benzene <0.00200 U 0.00200 01/19/23 13:13 01/21/23 00:19 mg/Kg

Job ID: 890-3865-1 Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

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

Lab Sample ID: MB 880-44340/5-A

**Matrix: Solid** 

Analysis Batch: 44418

Prep Type: Total/NA

Prep Batch: 44340

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.00200	U	0.00200	mg/Kg		01/19/23 13:13	01/21/23 00:19	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/19/23 13:13	01/21/23 00:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/19/23 13:13	01/21/23 00:19	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/19/23 13:13	01/21/23 00:19	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/19/23 13:13	01/21/23 00:19	1

мв мв

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	01/19/23 13:13	01/21/23 00:19	1
1,4-Difluorobenzene (Surr)	112		70 - 130	01/19/23 13:13	01/21/23 00:19	1

Lab Sample ID: MB 880-44342/5-A

**Matrix: Solid** 

**Analysis Batch: 44418** 

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

Prep Batch: 44342

Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Benzene <0.00200 U 0.00200 mg/Kg 01/19/23 13:17 01/21/23 11:57 Toluene 0.00200 <0.00200 U mg/Kg 01/19/23 13:17 01/21/23 11:57 Ethylbenzene 01/21/23 11:57 <0.00200 U 0.00200 01/19/23 13:17 mg/Kg m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 01/19/23 13:17 01/21/23 11:57 o-Xylene <0.00200 U 0.00200 01/21/23 11:57 mg/Kg 01/19/23 13:17 Xylenes, Total <0.00400 U 0.00400 mg/Kg 01/19/23 13:17 01/21/23 11:57

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130	01/19/23 13:17	01/21/23 11:57	1
1,4-Difluorobenzene (Surr)	111		70 - 130	01/19/23 13:17	01/21/23 11:57	1

Lab Sample ID: LCS 880-44342/1-A

**Matrix: Solid** 

Analysis Batch: 44418

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 44342

LCS LCS %Rec Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.09578 mg/Kg 96 70 - 130 0.100 0.08907 Toluene mg/Kg 89 70 - 130 0.100 0.08538 mg/Kg 85 70 - 130 Ethylbenzene 0.200 m-Xylene & p-Xylene 0.1726 86 70 - 130 mg/Kg o-Xylene 0.100 0.08413 mg/Kg 70 - 130

LCS LCS

Surrogate	%Recovery Quali	fier Limits
4-Bromofluorobenzene (Surr)	96	70 - 130
1,4-Difluorobenzene (Surr)	114	70 - 130

Lab Sample ID: LCSD 880-44342/2-A

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 44342

	<b>Бріке</b>	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09760		mg/Kg		98	70 - 130	2	35
Toluene	0.100	0.09010		mg/Kg		90	70 - 130	1	35

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### **QC Sample Results**

Client: Ensolum Job ID: 890-3865-1 SDG: 03C1558155 Project/Site: PLU 25 BRUSHY DRAW 901H

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

Lab Sample ID: LCSD 880-44342/2-A

**Matrix: Solid** 

**Analysis Batch: 44418** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Prep Batch: 44342

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethylbenzene	0.100	0.08582		mg/Kg		86	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.1730		mg/Kg		86	70 - 130	0	35
o-Xylene	0.100	0.08489		mg/Kg		85	70 - 130	1	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	115		70 - 130

Lab Sample ID: 880-23720-A-61-G MS

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 44342

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00202	U F2 F1	0.0996	0.06497	F1	mg/Kg		65	70 - 130	
Toluene	<0.00202	U F2 F1	0.0996	0.06294	F1	mg/Kg		63	70 - 130	
Ethylbenzene	<0.00202	U F2 F1	0.0996	0.06079	F1	mg/Kg		61	70 - 130	
m-Xylene & p-Xylene	<0.00404	U F2 F1	0.199	0.1231	F1	mg/Kg		62	70 - 130	
o-Xylene	<0.00202	U F2 F1	0.0996	0.06114	F1	mg/Kg		61	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-23720-A-61-H MSD

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 44342

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00202	U F2 F1	0.0990	0.02872	F2 F1	mg/Kg		29	70 - 130	77	35
Toluene	<0.00202	U F2 F1	0.0990	0.02996	F2 F1	mg/Kg		30	70 - 130	71	35
Ethylbenzene	<0.00202	U F2 F1	0.0990	0.03097	F2 F1	mg/Kg		31	70 - 130	65	35
m-Xylene & p-Xylene	<0.00404	U F2 F1	0.198	0.06516	F2 F1	mg/Kg		33	70 - 130	62	35
o-Xylene	<0.00202	U F2 F1	0.0990	0.03524	F2 F1	mg/Kg		36	70 - 130	54	35

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	101	70 - 130
1,4-Difluorobenzene (Surr)	112	70 - 130

Lab Sample ID: MB 880-44393/5-A

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44393

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		01/19/23 16:39	01/20/23 12:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/19/23 16:39	01/20/23 12:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/19/23 16:39	01/20/23 12:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/19/23 16:39	01/20/23 12:04	1
o-Xylene	< 0.00200	U	0.00200	mg/Kg		01/19/23 16:39	01/20/23 12:04	1

Project/Site: PLU 25 BRUSHY DRAW 901H

Lab Sample ID: MB 880-44393/5-A

Lab Sample ID: LCS 880-44393/1-A

**Matrix: Solid** 

Analyte

Xylenes, Total

Surrogate

Matrix: Solid

Analyte

Benzene

Toluene

o-Xylene

Surrogate

Ethylbenzene

m-Xylene & p-Xylene

Analysis Batch: 44418

4-Bromofluorobenzene (Surr)

**Analysis Batch: 44418** 

1,4-Difluorobenzene (Surr)

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

RL

0.00400

Limits

70 - 130

70 - 130

Spike

Added

0.100

0.100

0.100

0.200

0.100

Limits

70 - 130

70 - 130

Unit

LCS LCS

0.09599

0.09139

0.08837

0.1809

0.08607

Result Qualifier

mg/Kg

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

Client: Ensolum

MB MB

IJ

мв мв

95

110

Qualifier

Qualifier

Result

<0.00400

%Recovery

LCS LCS

97

113

Qualifier

%Recovery

Job ID: 890-3865-1 SDG: 03C1558155

Dil Fac

Client Sample ID: Method Blank

Analyzed

01/20/23 12:04

01/20/23 12:04

01/20/23 12:04

Prep Type: Total/NA

Prep Batch: 44393

Prepared Analyzed Dil Fac

Prepared

01/19/23 16:39

01/19/23 16:39

01/19/23 16:39

%Rec

96

91

88

90

86

D

Client Sample ID: Lab Control Sample

Limits

70 - 130

70 - 130

70 - 130

70 - 130

70 - 130

Prep Type: Total/NA

Prep Batch: 44393

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 44393

**Analysis Batch: 44418** 

**Matrix: Solid** 

4-Bromofluorobenzene (Surr)

Lab Sample ID: LCSD 880-44393/2-A

1,4-Difluorobenzene (Surr)

LCSD LCSD RPD Spike %Rec RPD Added Result Qualifier Limit Analyte Unit D %Rec Limits Benzene 0.100 0.09064 mg/Kg 91 70 - 130 6 35 Toluene 0.100 0.08785 mg/Kg 88 70 - 130 35 4 Ethylbenzene 0.100 0.08581 mg/Kg 86 70 - 130 3 35 m-Xylene & p-Xylene 0.200 0.1748 mg/Kg 87 70 - 130 3 35 o-Xylene 0.100 0.08350 mg/Kg 83 70 - 130 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 880-23936-A-1-A MS

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Matrix Spike
D T T . 4 - 1/0.1 A

Prep Type: Total/NA

Prep Batch: 44393

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00198	U	0.0998	0.09771		mg/Kg		98	70 - 130	
Toluene	<0.00198	U	0.0998	0.09186		mg/Kg		92	70 - 130	
Ethylbenzene	<0.00198	U	0.0998	0.09038		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	<0.00396	U	0.200	0.1866		mg/Kg		93	70 - 130	
o-Xylene	<0.00198	U	0.0998	0.08930		mg/Kg		89	70 - 130	

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

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

Lab Sample ID: 880-23936-A-1-A MS

**Matrix: Solid** 

Analysis Batch: 44418

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 44393

MS MS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 97 70 - 130 1,4-Difluorobenzene (Surr) 114 70 - 130

Lab Sample ID: 880-23936-A-1-B MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 44418** 

Prep Type: Total/NA

Prep Batch: 44393

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00198	U	0.100	0.09615		mg/Kg		96	70 - 130	2	35
Toluene	<0.00198	U	0.100	0.08993		mg/Kg		90	70 - 130	2	35
Ethylbenzene	<0.00198	U	0.100	0.08612		mg/Kg		86	70 - 130	5	35
m-Xylene & p-Xylene	<0.00396	U	0.200	0.1753		mg/Kg		87	70 - 130	6	35
o-Xylene	<0.00198	U	0.100	0.08306		mg/Kg		83	70 - 130	7	35

MSD MSD

%Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene (Surr) 95 70 - 130 1,4-Difluorobenzene (Surr) 114 70 - 130

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

Lab Sample ID: MB 880-44318/1-A

**Matrix: Solid** 

Analysis Batch: 44899

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44318

ME	MB						
Analyte Resul	t Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics <50.0 (GRO)-C6-C10	Ū	50.0	mg/Kg		01/19/23 10:32	01/28/23 01:58	1
Diesel Range Organics (Over <50.0 C10-C28)	U	50.0	mg/Kg		01/19/23 10:32	01/28/23 01:58	1
Oll Range Organics (Over C28-C36) <50.0	U	50.0	mg/Kg		01/19/23 10:32	01/28/23 01:58	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	163	S1+	70 - 130	01/19/23 10:32	01/28/23 01:58	1
o-Terphenyl	180	S1+	70 - 130	01/19/23 10:32	01/28/23 01:58	1

Lab Sample ID: LCS 880-44318/2-A

**Matrix: Solid** 

Analysis Batch: 44899

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 44318

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	888.4		mg/Kg		89	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1297		mg/Kg		130	70 - 130	
040,000)								

C10-C28)

	LCS	LUS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	124		70 - 130
o-Terphenyl	133	S1+	70 - 130

Analysis Batch: 44899

Job ID: 890-3865-1 Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H

SDG: 03C1558155

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

Lab Sample ID: LCSD 880-44318/3-A **Matrix: Solid** 

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

Prep Batch: 44318

Spike LCSD LCSD Limit Analyte babbA Result Qualifier Unit %Rec Limits RPD D Gasoline Range Organics 1000 841.7 mg/Kg 84 70 - 130 5 20 (GRO)-C6-C10 1000 Diesel Range Organics (Over 1220 mg/Kg 70 - 130 122 6 20

RPD

C10-C28) LCSD LCSD Qualifier Limits

Surrogate %Recovery 70 - 130 1-Chlorooctane 106 o-Terphenyl 114 70 - 130

Lab Sample ID: 880-23716-A-1-F MS Client Sample ID: Matrix Spike

Added

998

998

Prep Type: Total/NA

**Matrix: Solid Analysis Batch: 44899** Prep Batch: 44318 Spike MS MS Sample Sample

Result Qualifier

210.5 F1

141.6 F1

Unit

mg/Kg

mg/Kg

D

13

%Rec %Rec Limits 21 70 - 130

70 - 130

Diesel Range Organics (Over C10-C28)

(GRO)-C6-C10

Analyte

Gasoline Range Organics

MS MS %Recovery Qualifier Surrogate Limits 1-Chlorooctane 20 S1-70 - 130 o-Terphenyl 12 S1-70 - 130

Result Qualifier

<49.9 U F1 F2

<49.9 U F1 F2

Lab Sample ID: 880-23716-A-1-G MSD

Lab Sample ID: MB 880-44319/1-A

Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 44899 Prep Batch: 44318

Sample Sample Spike MSD MSD %Rec RPD Limit Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD <49.9 U F1 F2 997 994.6 F2 Gasoline Range Organics 100 70 - 130 130 20 mg/Kg (GRO)-C6-C10 997 616.8 F1 F2 60 70 - 130 125 Diesel Range Organics (Over <49.9 U F1 F2 mg/Kg 20

C10-C28)

**Matrix: Solid** 

**Analysis Batch: 44950** 

MSD MSD Qualifier Limits Surrogate %Recovery 1-Chlorooctane 59 S1-70 - 130 55 S1-70 - 130 o-Terphenyl

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44319

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		01/19/23 10:36	01/28/23 10:29	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/19/23 10:36	01/28/23 10:29	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/19/23 10:36	01/28/23 10:29	1

 Client: Ensolum
 Job ID: 890-3865-1

 Project/Site: PLU 25 BRUSHY DRAW 901H
 SDG: 03C1558155

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

Lab Sample ID: MB 880-44319/1-A

Matrix: Solid

Analysis Batch: 44950

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44319

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prep	oared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130	01/19/2	23 10:36	01/28/23 10:29	1
o-Terphenyl	113		70 - 130	01/19/2	23 10:36	01/28/23 10:29	1

Lab Sample ID: LCS 880-44319/2-A Client Sample ID: Lab Control Sample

Matrix: Solid

**Analysis Batch: 44950** 

Slient Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 44319

	Spike	LCS	LCS			%Rec	
Analyte	Added	Result	Qualifier Un	nit D	%Rec	Limits	
Gasoline Range Organics	1000	953.8	mg	g/Kg	95	70 - 130	
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	1096	mg	g/Kg	110	70 - 130	
C10-C28)							

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	108		70 - 130
o-Terphenyl	109		70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 44950

Analysis Batch: 44950

Lab Sample ID: LCSD 880-44319/3-A

Prep Batch: 44319

Spike LCSD LCSD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 908.1 mg/Kg 91 70 - 130 5 20 (GRO)-C6-C10 1000 Diesel Range Organics (Over 1049 mg/Kg 105 70 - 130 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	105	70 - 130
o-Terphenyl	106	70 - 130

Lab Sample ID: 890-3867-A-1-E MS

Client Sample ID: Matrix Spike

Matrix: Solid

Prep Type: Total/NA

Prep Type: Total/NA Prep Batch: 44319

Sample Sample Spike MS MS %Rec

Result Qualifier Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <49.9 U 998 887.1 84 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 988.9 mg/Kg 70 - 130

C10-C28)

MS MS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	69	S1-	70 - 130

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Job ID: 890-3865-1 Client: Ensolum Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

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

Lab Sample ID: 890-3867-A-1-F MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Analysis Batch: 44950 Prep Type: Total/NA Prep Batch: 44319

Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

Client Sample ID: FS01

Client Sample ID: FS01

**Prep Type: Soluble** 

Sample Sample MSD MSD RPD Spike Analyte Result Qualifier Added Result Qualifier %Rec Limits RPD Limit Unit D Gasoline Range Organics <49.9 U 997 915.4 mg/Kg 87 70 - 130 3 20 (GRO)-C6-C10 997 952.0 Diesel Range Organics (Over <49.9 U mg/Kg 93 70 - 1304 20

C10-C28)

MSD MSD %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 79 o-Terphenyl 67 S1-70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44245/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 44498** 

MB MB

Result Qualifier Unit Analyte RL Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 mg/Kg 01/20/23 17:31

Lab Sample ID: LCS 880-44245/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 44498** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 255.6 90 - 110 mg/Kg 102

Lab Sample ID: LCSD 880-44245/3-A

**Matrix: Solid** 

Analysis Batch: 44498

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	254 7		ma/Ka		102	90 - 110		20	

Lab Sample ID: 890-3865-1 MS

**Matrix: Solid** 

**Analysis Batch: 44498** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	2140	F1	1260	3578	F1	ma/Ka		114	90 - 110	

Lab Sample ID: 890-3865-1 MSD

Matrix: Solid Analysis Batch: 44498									Prep	Type: S	oluble
, , , , , , , , , , , , , , , , , , ,	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	2140	F1	1260	3578	F1	mg/Kg		114	90 - 110	0	20

 Client: Ensolum
 Job ID: 890-3865-1

 Project/Site: PLU 25 BRUSHY DRAW 901H
 SDG: 03C1558155

**GC VOA** 

Prep Batch: 44233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-44233/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 44315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Total/NA	Solid	8021B	44333
890-3865-3	FS03	Total/NA	Solid	8021B	44333
890-3865-4	FS04	Total/NA	Solid	8021B	44333
890-3865-5	FS05	Total/NA	Solid	8021B	44333
890-3865-6	FS06	Total/NA	Solid	8021B	44333
890-3865-7	FS07	Total/NA	Solid	8021B	44333
890-3865-8	SW01	Total/NA	Solid	8021B	44333
890-3865-9	SW02	Total/NA	Solid	8021B	44333
MB 880-44233/5-A	Method Blank	Total/NA	Solid	8021B	44233
MB 880-44333/5-A	Method Blank	Total/NA	Solid	8021B	44333
LCS 880-44333/1-A	Lab Control Sample	Total/NA	Solid	8021B	44333
LCSD 880-44333/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	44333
890-3865-1 MS	FS01	Total/NA	Solid	8021B	44333
890-3865-1 MSD	FS01	Total/NA	Solid	8021B	44333

Prep Batch: 44333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Total/NA	Solid	5035	
890-3865-3	FS03	Total/NA	Solid	5035	
890-3865-4	FS04	Total/NA	Solid	5035	
890-3865-5	FS05	Total/NA	Solid	5035	
890-3865-6	FS06	Total/NA	Solid	5035	
890-3865-7	FS07	Total/NA	Solid	5035	
890-3865-8	SW01	Total/NA	Solid	5035	
890-3865-9	SW02	Total/NA	Solid	5035	
MB 880-44333/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-44333/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-44333/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3865-1 MS	FS01	Total/NA	Solid	5035	
890-3865-1 MSD	FS01	Total/NA	Solid	5035	

Prep Batch: 44340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-44340/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 44342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-2	FS02	Total/NA	Solid	5035	
MB 880-44342/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-44342/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-44342/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23720-A-61-G MS	Matrix Spike	Total/NA	Solid	5035	
880-23720-A-61-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 44393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-5	FS05	Total/NA	Solid	5035	

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Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

### **GC VOA (Continued)**

### Prep Batch: 44393 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-44393/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### **Analysis Batch: 44418**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-2	FS02	Total/NA	Solid	8021B	44342
890-3865-5	FS05	Total/NA	Solid	8021B	44393
MB 880-44340/5-A	Method Blank	Total/NA	Solid	8021B	44340
MB 880-44342/5-A	Method Blank	Total/NA	Solid	8021B	44342
MB 880-44393/5-A	Method Blank	Total/NA	Solid	8021B	44393
LCS 880-44342/1-A	Lab Control Sample	Total/NA	Solid	8021B	44342
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	8021B	44393
LCSD 880-44342/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	44342
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	44393
880-23720-A-61-G MS	Matrix Spike	Total/NA	Solid	8021B	44342
880-23720-A-61-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	44342
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	44393
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	44393

### Analysis Batch: 44472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Total/NA	Solid	Total BTEX	
890-3865-2	FS02	Total/NA	Solid	Total BTEX	
890-3865-3	FS03	Total/NA	Solid	Total BTEX	
890-3865-4	FS04	Total/NA	Solid	Total BTEX	
890-3865-5	FS05	Total/NA	Solid	Total BTEX	
890-3865-6	FS06	Total/NA	Solid	Total BTEX	
890-3865-7	FS07	Total/NA	Solid	Total BTEX	
890-3865-8	SW01	Total/NA	Solid	Total BTEX	
890-3865-9	SW02	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

### Prep Batch: 44318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Total/NA	Solid	8015NM Prep	
890-3865-2	FS02	Total/NA	Solid	8015NM Prep	
890-3865-3	FS03	Total/NA	Solid	8015NM Prep	
890-3865-4	FS04	Total/NA	Solid	8015NM Prep	
890-3865-5	FS05	Total/NA	Solid	8015NM Prep	
MB 880-44318/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-44318/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-44318/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-23716-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-23716-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Client: Ensolum Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

GC Semi VOA

### Prep Batch: 44319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-6	FS06	Total/NA	Solid	8015NM Prep	
890-3865-7	FS07	Total/NA	Solid	8015NM Prep	
890-3865-8	SW01	Total/NA	Solid	8015NM Prep	
890-3865-9	SW02	Total/NA	Solid	8015NM Prep	
MB 880-44319/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-44319/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-44319/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3867-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3867-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 44899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Total/NA	Solid	8015B NM	44318
890-3865-2	FS02	Total/NA	Solid	8015B NM	44318
890-3865-3	FS03	Total/NA	Solid	8015B NM	44318
890-3865-4	FS04	Total/NA	Solid	8015B NM	44318
890-3865-5	FS05	Total/NA	Solid	8015B NM	44318
MB 880-44318/1-A	Method Blank	Total/NA	Solid	8015B NM	44318
LCS 880-44318/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	44318
LCSD 880-44318/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	44318
880-23716-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	44318
880-23716-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	44318

### Analysis Batch: 44950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-6	FS06	Total/NA	Solid	8015B NM	44319
890-3865-7	FS07	Total/NA	Solid	8015B NM	44319
890-3865-8	SW01	Total/NA	Solid	8015B NM	44319
890-3865-9	SW02	Total/NA	Solid	8015B NM	44319
MB 880-44319/1-A	Method Blank	Total/NA	Solid	8015B NM	44319
LCS 880-44319/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	44319
LCSD 880-44319/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	44319
890-3867-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	44319
890-3867-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	44319

### Analysis Batch: 44998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Total/NA	Solid	8015 NM	_
890-3865-2	FS02	Total/NA	Solid	8015 NM	
890-3865-3	FS03	Total/NA	Solid	8015 NM	
890-3865-4	FS04	Total/NA	Solid	8015 NM	
890-3865-5	FS05	Total/NA	Solid	8015 NM	
890-3865-6	FS06	Total/NA	Solid	8015 NM	
890-3865-7	FS07	Total/NA	Solid	8015 NM	
890-3865-8	SW01	Total/NA	Solid	8015 NM	
890-3865-9	SW02	Total/NA	Solid	8015 NM	

 Client: Ensolum
 Job ID: 890-3865-1

 Project/Site: PLU 25 BRUSHY DRAW 901H
 SDG: 03C1558155

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### Leach Batch: 44245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Soluble	Solid	DI Leach	
890-3865-2	FS02	Soluble	Solid	DI Leach	
890-3865-3	FS03	Soluble	Solid	DI Leach	
890-3865-4	FS04	Soluble	Solid	DI Leach	
890-3865-5	FS05	Soluble	Solid	DI Leach	
890-3865-6	FS06	Soluble	Solid	DI Leach	
890-3865-7	FS07	Soluble	Solid	DI Leach	
890-3865-8	SW01	Soluble	Solid	DI Leach	
890-3865-9	SW02	Soluble	Solid	DI Leach	
MB 880-44245/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44245/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44245/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3865-1 MS	FS01	Soluble	Solid	DI Leach	
890-3865-1 MSD	FS01	Soluble	Solid	DI Leach	

### Analysis Batch: 44498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3865-1	FS01	Soluble	Solid	300.0	44245
890-3865-2	FS02	Soluble	Solid	300.0	44245
890-3865-3	FS03	Soluble	Solid	300.0	44245
890-3865-4	FS04	Soluble	Solid	300.0	44245
890-3865-5	FS05	Soluble	Solid	300.0	44245
890-3865-6	FS06	Soluble	Solid	300.0	44245
890-3865-7	FS07	Soluble	Solid	300.0	44245
890-3865-8	SW01	Soluble	Solid	300.0	44245
890-3865-9	SW02	Soluble	Solid	300.0	44245
MB 880-44245/1-A	Method Blank	Soluble	Solid	300.0	44245
LCS 880-44245/2-A	Lab Control Sample	Soluble	Solid	300.0	44245
LCSD 880-44245/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44245
890-3865-1 MS	FS01	Soluble	Solid	300.0	44245
890-3865-1 MSD	FS01	Soluble	Solid	300.0	44245

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Client: Ensolum

Project/Site: PLU 25 BRUSHY DRAW 901H

Job ID: 890-3865-1 SDG: 03C1558155

**Client Sample ID: FS01** Lab Sample ID: 890-3865-1

Matrix: Solid

Date Collected: 01/13/23 13:35 Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	44333	01/19/23 12:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/19/23 22:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			44998	01/30/23 09:56	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	44318	01/19/23 10:32	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44899	01/28/23 09:59	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	44245	01/18/23 11:49	KS	EET MID
Soluble	Analysis	300.0		5			44498	01/20/23 17:49	CH	EET MID

**Client Sample ID: FS02** Lab Sample ID: 890-3865-2

Date Collected: 01/13/23 13:40 Matrix: Solid

Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	44342	01/19/23 13:17	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44418	01/21/23 18:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44472	01/23/23 12:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			44998	01/30/23 09:56	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	44318	01/19/23 10:32	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44899	01/28/23 10:20	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	44245	01/18/23 11:49	KS	EET MID
Soluble	Analysis	300.0		5			44498	01/20/23 18:06	CH	EET MID

**Client Sample ID: FS03** Lab Sample ID: 890-3865-3 Date Collected: 01/13/23 13:45 **Matrix: Solid** 

Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	44333	01/19/23 12:58	MNR	EET MIC
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/19/23 22:55	MNR	EET MIC
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			44998	01/30/23 09:56	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	44318	01/19/23 10:32	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44899	01/28/23 10:44	AJ	EET MIC
Soluble	Leach	DI Leach			5 g	50 mL	44245	01/18/23 11:49	KS	EET MIC
Soluble	Analysis	300.0		5			44498	01/20/23 18:12	CH	EET MID

**Client Sample ID: FS04** Lab Sample ID: 890-3865-4

Date Collected: 01/13/23 13:50 Date Received: 01/16/23 08:46

Released to Imaging: 5/30/2023 10:43:51 AM

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	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	44333	01/19/23 12:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/19/23 23:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MID

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**Matrix: Solid** 

Client: Ensolum
Project/Site: PLU 25 BRUSHY DRAW 901H

Job ID: 890-3865-1 SDG: 03C1558155

Client Sample ID: FS04

Date Collected: 01/13/23 13:50

Lab Sample ID: 890-3865-4 Matrix: Solid

Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			44998	01/30/23 09:56	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	44318	01/19/23 10:32	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44899	01/28/23 11:08	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	44245	01/18/23 11:49	KS	EET MID
Soluble	Analysis	300.0		5			44498	01/20/23 18:18	CH	EET MID

Client Sample ID: FS05 Lab Sample ID: 890-3865-5

Date Collected: 01/13/23 13:55

Matrix: Solid

Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	44393	01/19/23 16:39	MNR	EET MIC
Total/NA	Analysis	8021B		1	5 mL	5 mL	44418	01/20/23 15:37	MNR	EET MIC
Total/NA	Prep	5035			4.97 g	5 mL	44333	01/19/23 12:58	MNR	EET MI
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/19/23 23:36	MNR	EET MI
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MI
Total/NA	Analysis	8015 NM		1			44998	01/30/23 09:56	AJ	EET MI
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	44318	01/19/23 10:32	DM	EET MI
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44899	01/28/23 11:32	AJ	EET MI
Soluble	Leach	DI Leach			5.04 g	50 mL	44245	01/18/23 11:49	KS	EET MI
Soluble	Analysis	300.0		5			44498	01/20/23 18:24	CH	EET MII

Client Sample ID: FS06 Lab Sample ID: 890-3865-6

Date Collected: 01/13/23 14:00 Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	44333	01/19/23 12:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/19/23 23:56	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			44998	01/30/23 10:23	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	44319	01/19/23 10:36	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44950	01/28/23 21:03	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	44245	01/18/23 11:49	KS	EET MID
Soluble	Analysis	300.0		5			44498	01/20/23 18:41	CH	EET MID

Client Sample ID: FS07 Lab Sample ID: 890-3865-7

Date Collected: 01/13/23 14:05 Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	44333	01/19/23 12:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/20/23 00:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			44998	01/30/23 10:23	AJ	EET MID

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**Matrix: Solid** 

**Matrix: Solid** 

Client: Ensolum

Date Received: 01/16/23 08:46

Project/Site: PLU 25 BRUSHY DRAW 901H

Job ID: 890-3865-1

SDG: 03C1558155

Client Sample ID: FS07 Lab Sample ID: 890-3865-7 Date Collected: 01/13/23 14:05

**Matrix: Solid** 

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 8015NM Prep Prep 10.02 g 10 mL 44319 01/19/23 10:36 DM **EET MID** Total/NA Analysis 8015B NM 1 1 uL 1 uL 44950 01/28/23 21:30 SM EET MID Soluble Leach DI Leach 4.99 g 50 mL 44245 01/18/23 11:49 KS **EET MID** Soluble Analysis 300.0 5 44498 01/20/23 18:47 СН **EET MID** 

Client Sample ID: SW01 Lab Sample ID: 890-3865-8

Date Collected: 01/13/23 13:25 **Matrix: Solid** Date Received: 01/16/23 08:46

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	44333	01/19/23 12:58	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44315	01/20/23 00:37	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44472	01/20/23 14:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			44998	01/30/23 10:23	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	44319	01/19/23 10:36	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44950	01/28/23 21:55	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	44245	01/18/23 11:49	KS	EET MID
Soluble	Analysis	300.0		5			44498	01/20/23 18:53	CH	EET MID

**Client Sample ID: SW02** Lab Sample ID: 890-3865-9

Date Collected: 01/13/23 13:30 Matrix: Solid Date Received: 01/16/23 08:46

Dil Initial Final Batch Batch Batch Prepared **Prep Type** Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Prep 5035 5.01 g 5 mL 44333 01/19/23 12:58 MNR EET MID Total/NA 8021B 01/20/23 00:57 Analysis 1 5 mL 5 mL 44315 MNR **EET MID** Total/NA Analysis Total BTEX 44472 01/20/23 14:02 SM **EET MID** 1 Analysis 8015 NM Total/NA 1 44998 01/30/23 10:23 ΑJ **EET MID** Total/NA Prep 8015NM Prep 10.00 g 10 mL 44319 01/19/23 10:36 DM **EET MID** Total/NA Analysis 8015B NM 1 uL 1 uL 44950 01/28/23 22:17 SM **EET MID** Soluble DI Leach 5.01 g 50 ml 44245 01/18/23 11:49 KS FFT MID Leach Soluble Analysis 300.0 5 44498 01/20/23 18:59 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 Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H

SDG: 03C1558155

### **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-22-25	06-30-23
The following analytes the agency does not of	· '	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes fo
Analysis Method	D M () 1	N.A Andre		
Alialysis Melliou	Prep Method	Matrix	Analyte	
8015 NM	Ргер Метпоа	Solid	Analyte Total TPH	

### **Method Summary**

Client: Ensolum

Job ID: 890-3865-1 Project/Site: PLU 25 BRUSHY DRAW 901H SDG: 03C1558155

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

### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

### Laboratory References:

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

### **Sample Summary**

Client: Ensolum

Project/Site: PLU 25 BRUSHY DRAW 901H

Job ID: 890-3865-1

SDG: 03C1558155

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3865-1	FS01	Solid	01/13/23 13:35	01/16/23 08:46	2
890-3865-2	FS02	Solid	01/13/23 13:40	01/16/23 08:46	2
890-3865-3	FS03	Solid	01/13/23 13:45	01/16/23 08:46	2
890-3865-4	FS04	Solid	01/13/23 13:50	01/16/23 08:46	2
890-3865-5	FS05	Solid	01/13/23 13:55	01/16/23 08:46	2
890-3865-6	FS06	Solid	01/13/23 14:00	01/16/23 08:46	2
890-3865-7	FS07	Solid	01/13/23 14:05	01/16/23 08:46	2
890-3865-8	SW01	Solid	01/13/23 13:25	01/16/23 08:46	0 - 2
890-3865-9	SW02	Solid	01/13/23 13:30	01/16/23 08:46	0 - 2

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Date/Time

Relinguished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date: 08/25/2020 Rev. 2020.2

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### Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

	<b>Environment Testing</b>	Midland, TX (4:	Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334	Work Order No:	
	Xenco	EL Paso, TX (5	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296		
		Hobbs, NM (	Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	www.xenco.com Page	of
roject Manager:	Tacoma Monisson	Bill to: (if different)	Garrett Green	m	
Company Name:	40.	Company Name:	XTO Energy	Program: UST/PST PRP Brownfields RRC	C Superfund □
	3122 Nati Parks Huy	Address:		roject:	
e ZIP:	Carryond NM 88220	City, State ZIP:		Reporting: Level III   Level III   PST/UST   TRRP	RP Level IV
		Email: hmorrisse		Deliverables: EDD ADaPT Other:	er:
Project Name:	H106 C	Turn Around	ANALYSIS REQUES		Preservative Codes
er:	03C155815会   YRautine	ne Rush Code		None: NO	DI Water: H <sub>2</sub> O
	32.10 85,-103.84166 Due Date:	e.		Cool: Cool	MeOH: Me
er's Name:		TAT starts the day received by		HCL: HC	HNO 3: HN
#:		L			NaOH: Na
SAMPLE RECEIPT	Temp Blank: (Yes No Wet Ice:	No neter	ذ	H <sub>3</sub> PO <sub>4</sub> ; HP	
Samples Received Intact:	ct: (Yes) No Thermometer ID:	14	le.	NaHSO 4: NABIS	IS
Cooler Custody Seals:	Yes No Correction Factor:				0 3
Sample Custody Seals:	Yes No (N/A) Temperature Reading:			of Custody	aOH: Zn
Total Containers:	Corrected Temperature:	E. C.	10	NaOH+Ascorbic Acid: SAPC	ic Acid: SAPC
Sample Identification	ication Matrix Sampled Sampled	id Depth Grab/ # of Cont	BT Ch	Sample	Sample Comments
<b>\$</b> 50	S Wis/23 1335	35 2' C 1	XXX	Inciclent #	并
F302	1 1 1340	0		nArP22	0AFP2232537823
FS03	134	5			
FS04	0350	0		Cost Ce	Center:
F-S05	1355	5			21001
FSOL	1400				
FSOT	1 1405	5 +			
SMOI		5 0-2'			
2 Umy	4 4 1330	7 - 12 (1-4	*		
			J. M.C.		
Total 200.7 / 6010	200.8 / 6020: 8RCRA	13PPM Texas 11 Al Sb As Ba Be B	Cd Ca Cr Co Cu Fe	Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Tl Sn ∪ V Zn	'n
Circle Method(s) a	nd Metal(s) to be analyzed	/ SPLP 6010 : 8RCRA S	Cd Cr Co Cu Pb Mn M	Ag TI U Hg: 1631/245.1/7470/74:	
otice: Signature of this docu	nent and relinquishment of samples constitutes a valid purchas	e order from client company to Euro	otics. 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 the contraction of the c	sand conditions	
Eurofins Xenco. A minimum	charge of \$85.00 will be applied to each project and a charge	of \$5 for each sample submitted to E	fEurofins 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.	previously negotiated.	

Phone:

**Eurofins Carlsbad** 

# **Chain of Custody Record**

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	Chain of Castoay Necold	2000	ody :	G C C	2					rş	ď					•	6		Environment Testing
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Sampier			Lab PM Krame	ĭer, Je	ssica						Carrier	Trackin	g No(s)	,-		89 00 00	)-1102 1		
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				Accredit NELA	ations	Requir	ed (Se	e note)								998 dor	# 1-3865-1		
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				eranana y tarrigi	ТРН										quo: .		Nitric Acid NaHSO4		
PO#				9)	D) Ful		de										MeOH Amchlor		H2SO4 TSP Dodecahydrate
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Project #: 89000093					_S_Pr			B							la de la contraction	гх	EDTA EDA	v <b>&lt;</b> \$	v pH 4-5 Trizma other (specify)
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			Matrix (W=water S=solid, O=waste/oil,		MOD_NM/8	MOD_Calc				,					All Carries Comme	. Number	ĺ		
Sample Date	\\ \ine	Preservati	A=Air) ion Code:	AND 1800	80	80	nedd .	erid.	20		4					7	Specia	V Instr	Special Instructions/Note.
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1/13/23	13 40 Mountain		Solid		×	×	×				_	$\dashv$				* 1			
1/13/23	13 45 Mountain		Solid		×	×	×				_		$\dashv$		- J	**			
1/13/23	13 50 Mountain		Solid		×	×	×	$\dashv$					-		-y-s-	9 <del>-2</del> 4	***************************************		***************************************
1/13/23	13 55 Mountain		Solid		×	×	×									- <b>/4</b>			THE STANFORM
1/13/23	14 00 Mountain		Solid		×	×	×								38	*			
1/13/23	14 05 Mountain		Solid		×	×	×								,	7829		***************************************	
1/13/23	13 25 Mountain		Solid		×	×	×									-a			
1/13/23	13 30 Mountain		Solid		×	×	×									<u>(25)</u>			
nment Testing South Cent d above for analysis/tests h Central LLC attention in	tral LLC places s/matrix being a mmediately If	the ownership nalyzed the sa all requested ac	of method ar amples must be ccreditations a	alyte & a shippe re currer	accredi d back nt to da	itation of to the	complia Eurofin	ance up ns Envi signed	on our ronmen	subcon t Testin of Custo	tract la g Soutl	borator	ies Thall LLC	is samp laborat	ory or once to E	ment is other in urofins	t forwarded to structions with Environment	under ch ill be pro nt Testin	nain-of-custody If the wided. Any change in South Central L
				Sa	mple	Disp	osal (	A fe	e may	be as	ssess	ed if	samp	les ar	e reta	ined	longer th	an 1 m	month)
Primary Deliver	able Rank 2			S .	2 Z	etum	To C	ient	200	deme.	spos	al By	Lab			rchive	For		Months
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	Phone  Due Date Requeste 1/20/2023 TAT Requested (d  PO #:  PO #:  Project # 89000093 SSOW#  SSOW#  1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 1/13/23 Date/Time  Date/Time  Date/Time  Date/Time  Date/Time	Phone   Phone   Phone   Phone   Phone   Phone   Phone   Phone   Po#:   Po#:	Phone  Due Date Requested 1/120/2023  TAT Requested (days)  TAT Requested (days)  Froject # 89000093  SSOW#  Sample Date Time Sample (C=comp. Time G=grab)  1/13/23 Mountain 13 45  1/13/23 Mountain 13 45  1/13/23 Mountain 13 55  1/13/23 Mountain 13 65  Date/Time  Date/Time  Date/Time	Due Date Requested	Phone   E-Meal   Kramer, Jee   E-Meal   Alex Coc Kramer, Jee   Alex Coc Kram	Phone	Phone	Phone	Phone   Estatal Kramer@et eurofinsus ou	Canner, Jessica   Email   Em	Phone	Prone	Company   Comp	Protein	Company   Comp	Property   Property	Property	Provided   Provided	Carry   Carr

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3865-1 SDG Number: 03C1558155

Login Number: 3865 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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	

2 103 bj 102

### **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3865-1 SDG Number: 03C1558155

Login Number: 3865 **List Source: Eurofins Midland** List Number: 2 List Creation: 01/17/23 11:09 AM

Creator: Teel, Brianna

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

<6mm (1/4").



APPENDIX D

**NMOCD Notifications** 

From: Green, Garrett J

To: ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD; Harimon, Jocelyn, EMNRD

Cc: <u>DelawareSpills /SM; Tacoma Morrissey</u>

Subject: XTO - Sampling Notification (Week of 1/9/23 - 1/13/23)

Date: Thursday, January 5, 2023 4:44:48 PM

### [ \*\*EXTERNAL EMAIL\*\*]

All,

XTO plans to complete final sampling activities at the following sites the week of Jan 9, 2023.

- PLU 16 TWR 126H Fire/ nAPP2233339417

PLU 25 BD 901H / nAPP2232537823

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

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 184113

### **CONDITIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	184113
	Action Type:
	[C-141] Release Corrective Action (C-141)

### CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2232537823 PLU 25 BRUSHY DRAW 901H, thank you. This closure is approved.	5/30/2023