

February 2, 2023

New Mexico Oil Conservation Division

New Mexico Energy, Minerals, and Natural Resources Department 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: Closure Request

Redhead 31 Federal 001H

Incident Number NAPP2230442646

Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of COG Operating, LLC (COG), has prepared this *Closure Request* to document assessment, remediation, and soil sampling activities performed at the Redhead 31 Federal 001H (Site; Figure 1). The purpose of the soil sampling activities was to assess for the presence or absence of impacts to soil following a release of produced water off pad. The release was caused by corrosion of a flowline. Based on Site assessment, excavation activities, and laboratory analytical results from soil sampling events, COG is reqesting closure for Incident Number NAPP2230442646.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit M, Section 18, Township 24 South, Range 32 East, in Lea County, New Mexico (32.2012°, -103.7225°) and is associated with oil and gas exploration and production operations on federally owned surface managed by the Bureau of Land Management (BLM).

On October 18, 2022, a release was discovered at the Site that had been caused by a hole in a salt-water disposal (SWD) line due to corrosion. Approximately 1.3 barrels (bbls) of produced water was released off pad. No free-standing fluids were recovered. COG reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on October 31, 2022. The release was assigned Incident Number NAPP2230442646.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Regional hydrologic data indicates depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on the nearest available groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office the State Engineer

(NMOSE) permitted well C-04576 POD 1, located approximately 8,748 feet west of the Site. The groundwater well has a reported depth to groundwater of 850 feet bgs and a total depth of 910 feet bgs. Ground surface elevation at the groundwater well location is 3,569 feet above mean sea level (amsl), which is approximately 6 feet lower in elevation than the Site. In addition, NMOSE permitted well number C-04388 POD 1, located 9,369 feet west of the Site has a reported depth to groundwater of 868 feet bgs and a total depth of 910 feet bgs. Both wells have been measured within the last five years. The next closest well is the NMOSE databse is permitted well C-04508 drilled in December of 2020 to a total depth of 110 feet bgs, which was dry. Nearby water wells used for depth to groundwater determination are presented on Figure 1. The referenced well record are included in Appendix B.

The closest continuously flowing or significant watercourse to the Site is an intermitent stream, located approximately 28,777 feet west 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 from 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): 2,500 mg/kg
- TPH-Gasoline Range Organics (GRO) + TPH-Desiel Range Organics (DRO): 1,000 mg/kg
- Chloride: 20,000 mg/kg

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top 4 feet of the release area on pad that was impacted by the release, per NMAC 19.15.29.13.D (1).

INITIAL SITE ASSESSMENT ACTIVITIES

On November 1, 2022, Ensolum evaluated the release based on information provided on the Form C-141 and visual observations. Onsite personnel documented the release and mapped the release extent (Figure 2). Ensolum collected delineation soil samples SS01, SS02, and SS03 within the release area to characterize impacted soil. Soil samples SS04 through SS07 were collected in each cardinal direction of the release to verify the lateal extent. All delineation soil samples were collected at a depth of 0.2 feet bgs.

All soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was conducted during the Site visit. A photograpgic log is included in Appendix C.

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 chemicals 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.

Laboratory analytical results for soil samples SS01, SS02, and SS03 indicated chloride concentrations exceeded the reclamation requirement. Laboratory analytical results for soil samples SS04 through SS07 indicated all COC concentrations were compliant with the most stringent Table 1 Closure Criteria and successfully define the lateral extent of the release. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

EXCAVATION ACTIVITIES

On December 5 and 6, 2022, Ensolum oversaw the excavation of impacted soil from the release area as indicated by visible staining and laboratory analytical results from delineation soil samples SS01 through SS03. Excavation activities were performed via hand shoveling and back-hoe to a depth of 4 feet bgs. To direct excavation activities, soil was field screened for VOCs and chloride. Photographic documentation is included in Appendix C.

Following removal of impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the excavation. Excavation floor composite soil samples FS01 through FS06 were collected from the terminal depth of the excavation (4 feet bgs). Sidewall composite soil samples SW01 through SW05 were collected from the sidewalls from the ground surface to the terminal depth to be representative of the vertical extent of the excavation. Confirmation soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation soil samples were handled and analyzed as previously described. The excavation extent and excavation soil samples locations were mapped utilizing a handheld GPS unit and are depicted on Figure 3.

Laboratory analytical results from the floor of the excavation (FS01 through FS06) were compliant with the reclamation requirement. Laboratory analytical results from confirmation soil sample SW05 indicated the chloride concentration exceeded the reclamation requirement and waste-containing soil was still present. All other confirmation excavation soil samples (SW01 through SW04) were compliant with the reclamation requirement.

Excavation activities at the Site resumed on January 9, 2023, to address residual waste-containing soil near SW05. Ensolum oversaw additional excavation activities and collected subsequent confirmation soil SW05A after additional waste-containing soil was removed. Laboratory analytical results from SW05A were compliant with the reclamation requirement.

Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

The total footprint of the excavation was approximately 1,150 square feet in size. A total of approximately 170 cubic yards of impacted soil were removed during the excavation. The impacted soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico. After completion of confirmation sampling, the excavation was backfilled.



CLOSURE REQUEST

Redhead 31 Federal 001H

Based on confirmation soil sample laboratory analytical results compliant with the reclamation requirement, excavation activities have successfully remediated the produced water impacts at the Site. Delineation soil samples collected outside the release extent successfully define the edge of the release. COG believes these remedial actions have been protective of human health, the environment, and groundwater. As such, COG respectfully requests closure for Incident Number NAPP2230442646. The Final C-141 is included in Appendix A and required notifications are included as Appendix E.

If you have any questions or comments, please contact Ms. Kalei Jennings at (817) 683-2503 or kjennings@ensolum.com.

Sincerely,

Ensolum, LLC

Josh Adams, PG Project Geologist Daniel R. Moir, PG Senior Managing Geologist

cc: Charles Beauvais, COG Operating, LLC

BLM

Attachments:

Figure 1 Site Location Map

Figure 2 Delineation Soil Sample Locations
Figure 3 Excavation Soil Sample Locations
Table 1 Soil Sample Analytical Results

Appendix A Final C-141

Appendix B Referenced Well Records

Appendix C Photographic Log

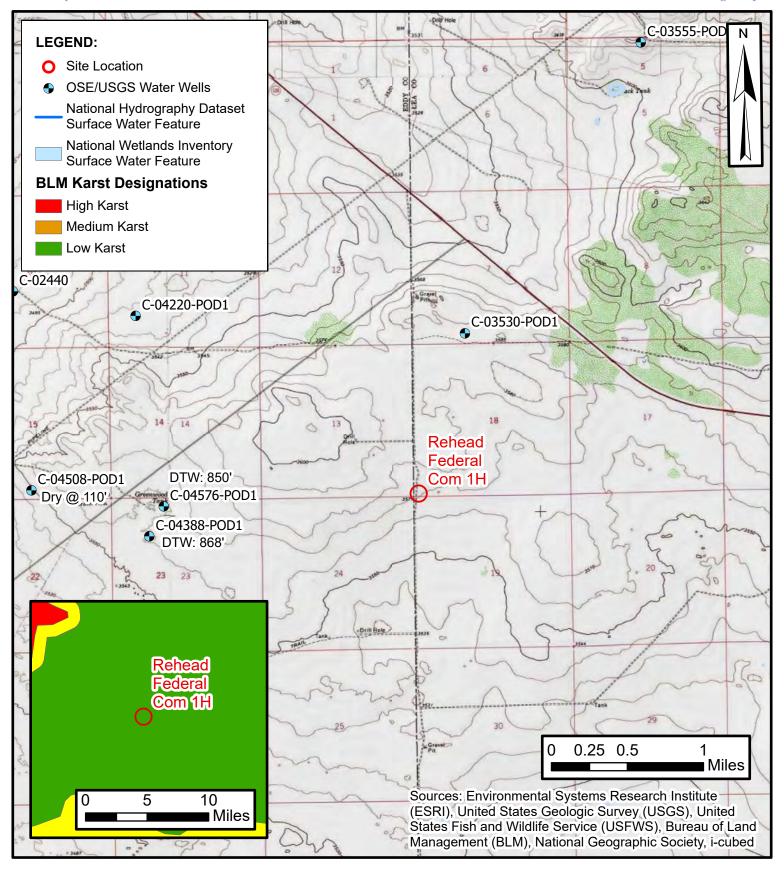
Appendix D Laboratory Analytical Reports

Appendix E NMOCD Notifications





FIGURES



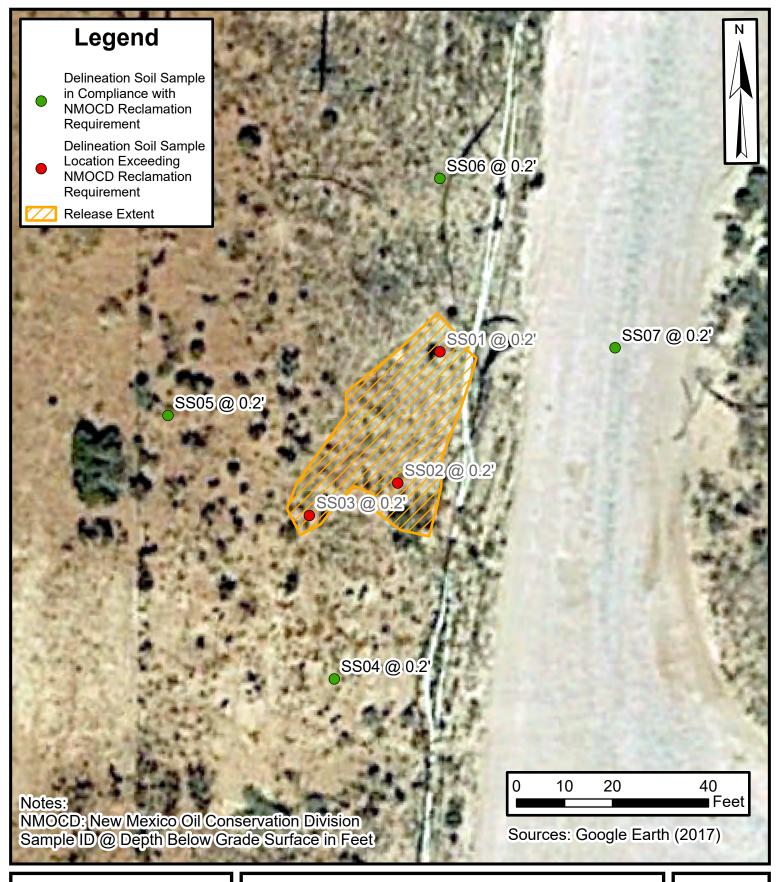


SITE RECEPTOR MAP

COG Operating, LLC Redhead 31 Federal 001H Incident Number: NAPP2230442646

> Unit M, Sec 18, T24S, R32E Lea County, New Mexico

FIGURE



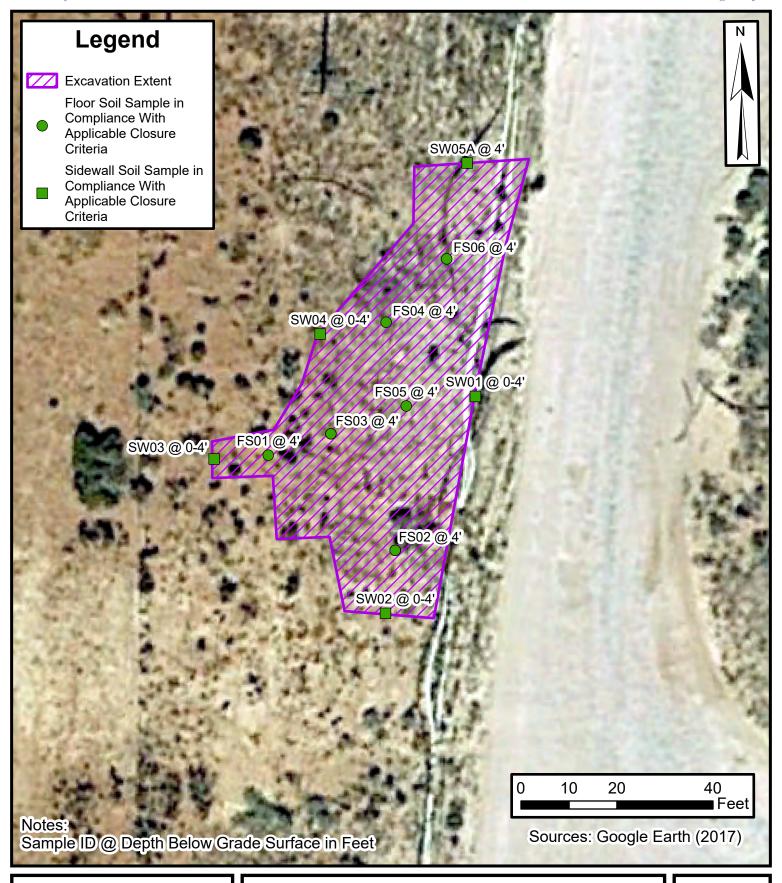


Delineation Soil Sample Locations

COG Operating, LLC Redhead 31 Federal 001H

Incident Number: NAPP2230442646 Unit M, SEC 18, T24S, R32E Lea County, New Mexico FIGURE

2





Excavation Soil Sample Locations

COG Operating, LLC Redhead 31 Federal 001H

Incident Number: NAPP2230442646 Unit M, SEC 18, T24S, R32E Lea County, New Mexico FIGURE

3



TABLE

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TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS Redhead 31 Federal 001H COG Operating, LLC Lea County, New Mexico

Sample Designation	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 (NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Deline	eation Soil Samp	les				
SS01*	11/01/2022	0.2	0.269	0.269	<50.0	76.0	<50.0	76.0	76.0	6,980
SS02*	11/01/2022	0.2	<0.00199	0.0181	<50.0	<50.0	<50.0	<50.0	<50.0	4,190
SS03*	11/01/2022	0.2	<0.00198	< 0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	4,600
SS04*	11/01/2022	0.2	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	48.9
SS05*	11/01/2022	0.2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	37.2
SS06*	11/01/2022	0.2	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	215
SS07*	11/01/2022	0.2	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	64.1
				Exc	cavation Samples					
FS01*	12/05/2022	4	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	78.0
FS02*	12/06/2022	4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	97.6
FS03*	12/06/2022	4	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	209
FS04*	12/06/2022	4	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	515
FS05*	12/06/2022	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	546
FS06*	12/06/2022	4	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	499
SW01*	12/05/2022	0-4	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	20.2
SW03*	12/05/2022	0-4	<0.0199	<0.0398	<50.0	<50.0	<50.0	<50.0	<50.0	22.1
SW04*	12/05/2022	0-4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	80.0
SW05*	12/06/2022	0-4	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	913
SW05A*	01/09/2023	0-4	< 0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	146

Notes:

bgs: below ground surface mg/kg: milligrams per kilogram

NMAC: New Mexico Administrative Code NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics DRO: Diesel Range Organics ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

Grey text represents samples that have been excavated

* - indicates areas that the reclamation requirement applies

Ensolum 1 of 1



APPENDIX A

Final C141

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	NAPP2230442646
District RP	
Facility ID	fAPP2203841419
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Charles Beauvais	Contact Telephone	(575) 988-2043
Contact email	Charles.R.Beauvais@ConocoPhillips.com	Incident # (assigned by OCD)	NAPP2230442646
Contact mailing address	600 West Illinois Avenue, Midlar	nd, Texas 79701	

			Location o	f R	Release Sourc	e	
Latitude	32.210)2	OIAD 92 in Justin	1 .1.	Longitude	103.7225	
			(NAD 83 in aecin	iai ae	egrees to 5 decimal plac	es)	
Site Name		Redhead 3	1 Federal 001	Η	Site Type	Flowline	
Date Release Discovered October 18, 2022			API# (if applicable)				
TT 1. T	1 0 .:	T 1:			G. A		
Unit Letter	Section	Township	Range		County		
M	18	24S	32E		Lea		
Surface Own	er: State	Federal T	ribal 🔲 Private (<i>Na</i>	me.		ì	
Sarrace Own	ci state		iour 🗀 i iivate (iva	,,,,,		,	

Nature and Volume of Release

Crude Oil	(s) Released (Select all that apply and attach calculations or specific Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls) 1.3	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	■ Yes □ No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a hole that developed in the SWD line due to corrosion.

The release was off the pad.

Evaluation will be made of the spill area to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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Incident ID	NAPP2230442646
District RP	
Facility ID	fAPP2203841419
Application ID	

	T	
Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the response	onsible party consider this a major release?
☐ Yes ■ No		
If YES, was immediate n	otice given to the OCD? By whom? To w	whom? When and by what means (phone, email, etc)?
	Initial F	Response
The responsible	party must undertake the following actions immediat	ely unless 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 an	d the environment.
Released materials ha	ave been contained via the use of berms or	dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed a	nd managed appropriately.
has begun, please attach	a narrative of actions to date. If remedia	remediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred please attach all information needed for closure evaluation.
regulations all operators are public health or the environ failed to adequately investig addition, OCD acceptance of and/or regulations.	required to report and/or file certain release no ment. The acceptance of a C-141 report by the gate and remediate contamination that pose a the of a C-141 report does not relieve the operator of	e best of my knowledge and understand that pursuant to OCD rules and tifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have reat to groundwater, surface water, human health or the environment. In f responsibility for compliance with any other federal, state, or local laws
Printed Name Brittar	ny N. Esparza	Title: Environmental Technician
Signatura: Bau	ny N. Esparza	
Brittany Fspar	za@ConocoPhillips.com	Date: 10/31/2022 Telephone: (432) 221-0398
email: Dittary: Lopar	24@00110001 111111p0.00111	Telephone: (402) 221-0000
OCD Only		
Received by: Jocely	n Harimon	Date: 10/31/2022
125001104 0 9 1		

See reference table below

L48 Spill Volume Estimate Form

Asset Area: NDBE

Was the release on pad or off-pad?

Release Discovery Date & Time: 10/17/2022 10:30

Release Type: Produced Water

Provide any known details about the event: FLOWLINE TO SWD GOT A HOLE IN IT

Spill Calculation - Subsurface Spill - Rectangle

t rained at least	a half inch in the last 24 hours?		See reference table below			
Length (ft.)	Width (ft.)	Depth (in.)	Soil Spilled-Fluid Saturation	Estimated volume of each area (bbl.)	Total Estimated Volume of Spill (bbl.)	
14.0	13.0	0.50	11.55%	1.350	0.156	
				0.000	0.000	
				0.000	0.000	
*			9	0.000	0.000	
*				#VALUE!	#VALUE!	
			9	0.000	0.000	
*			9	0.000	0.000	
*	*			0.000	0.000	
*			9	0.000	0.000	
Released	to Imaging: 10/31/2022 1:28.	:45 PM	9	0.000	0.000	
				Total Volume Release:	1.350	

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 154957

CONDITIONS

Operator:	OGRID:
COG OPERATING LLC	229137
600 W Illinois Ave	Action Number:
Midland, TX 79701	154957
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	10/31/2022

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Incident ID 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 X 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 X No			
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No			
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No			
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No			
Did the release impact areas not on an exploration, development, production, or storage site?	X 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.				

<u>Characterization Report Checklist</u> : Each of the following items must be included in the report.					
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Field data					
Data table of soil contaminant concentration data					
Depth to water determination Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release					
Boring or excavation logs					
Photographs including date and GIS information					
 ∑ Topographic/Aerial maps ∑ Laboratory data including chain of custody 					
Laboratory data including chain of custody					

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

Received by OCD: 2/3/2023 12:12:13 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

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Incident ID	NAPP2230442646	
District RP		
Facility ID		
Application ID		

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.							
Printed Name:Charles Beauvais	Title:Senior Environmental Engineer						
Signature: Charles R. Beauvais 99	Date:02/02/2023						
email:Charles.R.Beauvais@conocophillips.com	Telephone:575-988-2043						
OCD Only Received by: Jocelyn Harimon	Date:02/03/2023						

of New Mexico

Incident ID	NAPP2230442646
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.								
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:Charles Beauvais Title: Senior Environmental Engineer								
Signature:								
email: Charles.R.Beauvais@conocophillips.com Telephone:575-988-2043								
OCD Only								
Received by: Jocelyn Harimon Date:02/03/2023								
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:								
Printed Name: Jennifer Nobui Title:Environmental Specialist A								



APPENDIX B

Referenced Well Record



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

 Well Tag
 POD Number
 Q64 Q16 Q4 Sec Tws Rng
 X
 Y

 NA
 C 04576 POD1
 1 2 1 23 248 31E 617700 3564324
 617700 3564324

Driller Name: GARY KEY

Drill Start Date: 10/21/2021 **Drill Finish Date:** 01/19/2022 **Plug Date:**

Log File Date:01/20/2022PCW Rcv Date:Source:ArtesianPump Type:Pipe Discharge Size:Estimated Yield:35 GPMCasing Size:Depth Well:910 feetDepth Water:850 feet

Water Bearing Stratifications: Top Bottom Description

850 875 Sandstone/Gravel/Conglomerate
885 905 Limestone/Dolomite/Chalk

Casing Perforations: Top Bottom

794 910

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/10/23 7:46 AM

POINT OF DIVERSION SUMMARY

Received by OCD: 2/3/2023 12:12:13 PM



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag **POD Number** Q64 Q16 Q4 Sec Tws Rng

22333

C 04388 POD1

23 24S 31E

617546

KEY'S DRILLING & PUMP SERVICE

3564006

 \mathbf{Y}

Driller License: 1058

Driller Company:

Driller Name:

KEY, GARYR.S AICHARDDENAS

Drill Start Date:

12/18/2019

Drill Finish Date:

02/22/2020

Plug Date:

Log File Date:

02/27/2020

PCW Rcv Date:

Source:

Artesian

Pump Type:

Pipe Discharge Size:

Estimated Yield:

60 GPM

Casing Size:

4.50

Depth Well:

910 feet

Depth Water:

868 feet

Water Bearing Stratifications:

Top Bottom Description

866

868 Limestone/Dolomite/Chalk

Casing Perforations:

Top Bottom

850 910

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/10/23 7:56 AM

POINT OF DIVERSION SUMMARY

Received by OCD: 2/3/2023 12:12:13 PM



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag **POD Number**

Q64 Q16 Q4 Sec Tws Rng

NA

C 04508 POD1

3 15 24S 31E

616298 3564493

Driller License: 1249

Driller Company:

ATKINS ENGINEERING ASSOC. INC.

Driller Name:

ATKINS, JACKIE D.UELENER

Drill Start Date:

12/29/2020

Drill Finish Date:

12/29/2020

Plug Date:

01/19/2021

Log File Date:

02/12/2021

PCW Rcv Date:

Source:

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

110 feet

Depth Water:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/10/23 9:23 AM

POINT OF DIVERSION SUMMARY

Received by OCD: 2/3/2023 12:12:13 PM



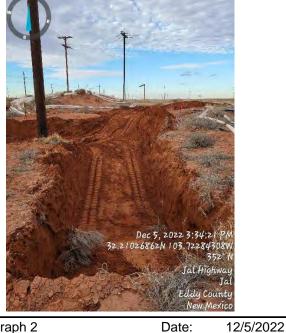
APPENDIX C

Photographic Log



Photographic Log COG Operating, LLC Redhead 31 Federal 001H NAPP2230442646





Photograph 1 Description: Release extent facing south.

11/4/2022 Photograph 2

Description: View of on-going excavation facing north.



Photograph 3

Date: 12/6/2022 Photograph 4

Date:

12/6/2022

Description: View of completed excavation facing south.

Description: View of completed excavation facing east.



APPENDIX D

Laboratory Analytical Report



APPENDIX D

Laboratory Analytical Report



Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3357-1

Laboratory Sample Delivery Group: 03D2024104 Client Project/Site: REDHEAD 31 FEDCOM 1H

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

RAMER

Authorized for release by: 11/9/2022 11:43:15 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

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.

Client: Ensolum Laboratory Job ID: 890-3357-1 Project/Site: REDHEAD 31 FEDCOM 1H

SDG: 03D2024104

Table of Contents

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QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Campio Cammary	18
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Eurofins Carlsbad 11/9/2022

Definitions/Glossary

Job ID: 890-3357-1 Client: Ensolum Project/Site: REDHEAD 31 FEDCOM 1H SDG: 03D2024104

Qualifiers

GC VOA Qualifier

F1 MS and/or MSD recovery exceeds control limits.

Qualifier Description

F2 MS/MSD RPD exceeds control limits

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description**

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

Eurofins Carlsbad

Case Narrative

Client: Ensolum

Project/Site: REDHEAD 31 FEDCOM 1H

Job ID: 890-3357-1

SDG: 03D2024104

Job ID: 890-3357-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3357-1

Receipt

The samples were received on 11/1/2022 3:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS01 (890-3357-1), SS02 (890-3357-2) and SS03 (890-3357-3).

GC VOA

Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-21092-A-6-D MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA

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

HPLC/IC

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

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Job ID: 890-3357-1

Client: Ensolum Project/Site: REDHEAD 31 FEDCOM 1H SDG: 03D2024104

Client Sample ID: SS01 Lab Sample ID: 890-3357-1 Date Collected: 11/01/22 10:35 Matrix: Solid Date Received: 11/01/22 15:05

Sample Depth: 0.2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.269		0.100	mg/Kg		11/07/22 08:38	11/09/22 04:00	50
Toluene	<0.100	U	0.100	mg/Kg		11/07/22 08:38	11/09/22 04:00	50
Ethylbenzene	<0.100	U	0.100	mg/Kg		11/07/22 08:38	11/09/22 04:00	50
m-Xylene & p-Xylene	<0.200	U	0.200	mg/Kg		11/07/22 08:38	11/09/22 04:00	50
o-Xylene	<0.100	U	0.100	mg/Kg		11/07/22 08:38	11/09/22 04:00	50
Xylenes, Total	<0.200	U	0.200	mg/Kg		11/07/22 08:38	11/09/22 04:00	50
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130			11/07/22 08:38	11/09/22 04:00	50
1,4-Difluorobenzene (Surr)	86		70 - 130			11/07/22 08:38	11/09/22 04:00	50
- Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.269		0.200	mg/Kg			11/09/22 11:30	1
Method: SW846 8015 NM - Diese	al Range Organ	ics (DRO) ((GC)					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	76.0		50.0	mg/Kg			44/07/00 44 40	
_				3. 3			11/07/22 11:43	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)	3 3			11/07/22 11:43	1
Method: SW846 8015B NM - Dies Analyte	•	nics (DRO) Qualifier	(GC)	Unit	D	Prepared	11/07/22 11:43 Analyzed	1 Dil Fac
	•	Qualifier	• •		<u>D</u>	Prepared 11/03/22 14:00		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	Unit mg/Kg	<u> </u>	11/03/22 14:00	Analyzed 11/04/22 23:26	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <50.0 76.0	Qualifier U	FL 50.0	Unit mg/Kg mg/Kg	<u> </u>	11/03/22 14:00 11/03/22 14:00	Analyzed 11/04/22 23:26 11/04/22 23:26	Dil Fac 1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0 76.0 <50.0	Qualifier U	RL 50.0 50.0 50.0	Unit mg/Kg mg/Kg	<u>D</u>	11/03/22 14:00 11/03/22 14:00 11/03/22 14:00	Analyzed 11/04/22 23:26 11/04/22 23:26 11/04/22 23:26	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result <50.0 76.0 <50.0 %Recovery	Qualifier U	50.0 50.0 50.0 <i>Limits</i>	Unit mg/Kg mg/Kg	<u>D</u>	11/03/22 14:00 11/03/22 14:00 11/03/22 14:00 <i>Prepared</i>	Analyzed 11/04/22 23:26 11/04/22 23:26 11/04/22 23:26 Analyzed	Dil Fac
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	RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	Unit mg/Kg mg/Kg	<u> </u>	11/03/22 14:00 11/03/22 14:00 11/03/22 14:00 Prepared 11/03/22 14:00	Analyzed 11/04/22 23:26 11/04/22 23:26 11/04/22 23:26 Analyzed 11/04/22 23:26	
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	RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	Unit mg/Kg mg/Kg	<u>D</u>	11/03/22 14:00 11/03/22 14:00 11/03/22 14:00 Prepared 11/03/22 14:00	Analyzed 11/04/22 23:26 11/04/22 23:26 11/04/22 23:26 Analyzed 11/04/22 23:26	Dil Fac

Client Sample ID: SS02 Lab Sample ID: 890-3357-2 Date Collected: 11/01/22 10:40 Matrix: Solid

Date Received: 11/01/22 15:05

Sample Depth: 0.2

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/07/22 08:38	11/09/22 01:37	1
Toluene	0.00199		0.00199	mg/Kg		11/07/22 08:38	11/09/22 01:37	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/07/22 08:38	11/09/22 01:37	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/07/22 08:38	11/09/22 01:37	1
o-Xylene	0.0161		0.00199	mg/Kg		11/07/22 08:38	11/09/22 01:37	1
Xylenes, Total	0.0161		0.00398	mg/Kg		11/07/22 08:38	11/09/22 01:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			11/07/22 08:38	11/09/22 01:37	1

Eurofins Carlsbad

Job ID: 890-3357-1

Client: Ensolum SDG: 03D2024104 Project/Site: REDHEAD 31 FEDCOM 1H

Client Sample ID: SS02 Date Collected: 11/01/22 10:40

Date Received: 11/01/22 15:05 Sample Depth: 0.2

Lab Sample ID: 890-3357-2

Matrix: Solid

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

Surrogate	%Recovery Q	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	94		70 - 130	11/07/22 08:38	11/09/22 01:37	1

Method: TAL SOP Total BTEX - Total BTEX Calculation								
	Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Total BTEX	0.0181	0.00398	mg/Kg			11/09/22 11:30	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)									
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Total TPH	<50.0	U	50.0	mg/Kg			11/07/22 11:43	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/04/22 23:48	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/04/22 23:48	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/04/22 23:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1-Chlorooctane	108		70 - 130	11/03/22 14:00	11/04/22 23:48	1
o-Terphenyl	100		70 - 130	11/03/22 14:00	11/04/22 23:48	1
Mothod: MCAMMA 200.0	Aniono lon Chromata	ananh	Calubla			

Method: MCAWW 300.0 - Amons, for Chromatography - Soluble									
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	4190		50.2	mg/Kg			11/04/22 21:27	10

Client Sample ID: SS03 Lab Sample ID: 890-3357-3 Date Collected: 11/01/22 10:45 **Matrix: Solid**

Date Received: 11/01/22 15:05

Sample Depth: 0.2

Analyte

Total TPH

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/07/22 08:38	11/09/22 02:59	1
Toluene	<0.00198	U	0.00198	mg/Kg		11/07/22 08:38	11/09/22 02:59	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/07/22 08:38	11/09/22 02:59	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		11/07/22 08:38	11/09/22 02:59	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/07/22 08:38	11/09/22 02:59	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/07/22 08:38	11/09/22 02:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130			11/07/22 08:38	11/09/22 02:59	1
1,4-Difluorobenzene (Surr)	90		70 - 130			11/07/22 08:38	11/09/22 02:59	1
Method: TAL SOP Total BTEX	- Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/09/22 11:30	1

Eurofins Carlsbad

Analyzed

11/07/22 11:43

RL

50.0

Unit

mg/Kg

Prepared

Result Qualifier

<50.0 U

Dil Fac

Matrix: Solid

Lab Sample ID: 890-3357-3

11/04/22 21:31

Client Sample Results

Client: Ensolum

Project/Site: REDHEAD 31 FEDCOM 1H

SDG: 03D2024104

Client Sample ID: SS03

Date Collected: 11/01/22 10:45 Date Received: 11/01/22 15:05

Sample Depth: 0.2

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/05/22 00:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/05/22 00:09	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/05/22 00:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130			11/03/22 14:00	11/05/22 00:09	1
o-Terphenyl	97		70 - 130			11/03/22 14:00	11/05/22 00:09	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - S	oluble					
Analyte	Rosult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

49.8

mg/Kg

4600

6

8

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11

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13

14

Surrogate Summary

Client: Ensolum Job ID: 890-3357-1
Project/Site: REDHEAD 31 FEDCOM 1H SDG: 03D2024104

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

-			
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-21092-A-6-C MS	Matrix Spike	113	96
880-21092-A-6-D MSD	Matrix Spike Duplicate	103	106
890-3357-1	SS01	124	86
890-3357-2	SS02	105	94
890-3357-3	SS03	100	90
LCS 880-38813/1-A	Lab Control Sample	105	90
LCSD 880-38813/2-A	Lab Control Sample Dup	106	107
MB 880-38813/5-A	Method Blank	89	88
MB 880-38884/5-A	Method Blank	88	92
Surrogate Legend			
BFB = 4-Bromofluorobe	nzene (Surr)		
DFBZ = 1,4-Difluoroben:	zene (Surr)		

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-21004-A-5-F MS	Matrix Spike	91	71	
880-21004-A-5-G MSD	Matrix Spike Duplicate	91	71	
890-3357-1	SS01	94	88	
890-3357-2	SS02	108	100	
890-3357-3	SS03	105	97	
LCS 880-38644/2-A	Lab Control Sample	93	89	
LCSD 880-38644/3-A	Lab Control Sample Dup	92	89	
MB 880-38644/1-A	Method Blank	93	91	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Eurofins Carlsbad

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A

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. .

Client: Ensolum Job ID: 890-3357-1 SDG: 03D2024104 Project/Site: REDHEAD 31 FEDCOM 1H

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38813/5-A

Matrix: Solid Analysis Batch: 38953 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 38813

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/07/22 08:38	11/08/22 22:11	1

мв мв

MD MD

Surrogate	%Recovery	Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	11/07/2	2 08:38	11/08/22 22:11	1
1,4-Difluorobenzene (Surr)	88		70 - 130	11/07/2	2 08:38	11/08/22 22:11	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 880-38813/1-A

Matrix: Solid

Analysis Batch: 38953

Prep Type: Total/NA

Prep Batch: 38813

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1086	-	mg/Kg		109	70 - 130	
Toluene	0.100	0.09645		mg/Kg		96	70 - 130	
Ethylbenzene	0.100	0.09317		mg/Kg		93	70 - 130	
m-Xylene & p-Xylene	0.200	0.1923		mg/Kg		96	70 - 130	
o-Xylene	0.100	0.09506		mg/Kg		95	70 - 130	

LCS LCS

Surrogate	%Recovery Q	ualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: LCSD 880-38813/2-A

Matrix: Solid

Analysis Batch: 38953

Client Sample ID: Lab Control Sample Dup	Client Sam	ple ID: Lab	Control San	nple Dup
--	------------	-------------	--------------------	----------

Prep Type: Total/NA

Prep Batch: 38813

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.1093		mg/Kg		109	70 - 130	1	35	
Toluene	0.100	0.09461		mg/Kg		95	70 - 130	2	35	
Ethylbenzene	0.100	0.09193		mg/Kg		92	70 - 130	1	35	
m-Xylene & p-Xylene	0.200	0.1905		mg/Kg		95	70 - 130	1	35	
o-Xylene	0.100	0.09425		mg/Kg		94	70 - 130	1	35	

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: 880-21092-A-6-C MS

Matrix: Solid

Analysis Batch: 38953

Client San	nple ID:	Matrix Spil	кe
	Pren T	me: Total/N	JΔ

Prep Batch: 38813

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U F1 F2	0.101	0.1037		mg/Kg		103	70 - 130	
Toluene	<0.00201	U F1 F2	0.101	0.09297		mg/Kg		92	70 - 130	

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Released to Imaging: 2/21/2023 12:16:35 PM

Client: Ensolum

Project/Site: REDHEAD 31 FEDCOM 1H

Job ID: 890-3357-1

SDG: 03D2024104

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

Lab Sample ID: 880-21092-A-6-C MS

Lab Sample ID: 880-21092-A-6-D MSD

Matrix: Solid

Analysis Batch: 38953

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

Prep Batch: 38813

Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
<0.00201	U F1 F2	0.101	0.09137		mg/Kg		91	70 - 130
<0.00402	U F1 F2	0.202	0.1883		mg/Kg		93	70 - 130
<0.00201	U F1 F2	0.101	0.09231		mg/Kg		91	70 - 130
	<0.00201	Result Qualifier	<0.00201 U F1 F2 0.101 <0.00402 U F1 F2 0.202	<0.00201	<0.00201 U F1 F2 0.101 0.09137 <0.00402 U F1 F2 0.202 0.1883	<0.00201 U F1 F2 0.101 0.09137 mg/Kg <0.00402 U F1 F2 0.202 0.1883 mg/Kg	<0.00201 U F1 F2 0.101 0.09137 mg/Kg <0.00402 U F1 F2 0.202 0.1883 mg/Kg	<0.00201

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 38813

Analysis Batch: 38953

Matrix: Solid

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U F1 F2	0.0994	0.02368	F1 F2	mg/Kg		24	70 - 130	126	35
Toluene	<0.00201	U F1 F2	0.0994	0.02194	F1 F2	mg/Kg		21	70 - 130	124	35
Ethylbenzene	<0.00201	U F1 F2	0.0994	0.02200	F1 F2	mg/Kg		22	70 - 130	122	35
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.199	0.02035	F1 F2	mg/Kg		10	70 - 130	161	35
o-Xylene	<0.00201	U F1 F2	0.0994	0.02229	F1 F2	mg/Kg		22	70 - 130	122	35

MSD MSD

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

Lab Sample ID: MB 880-38884/5-A Client Sample ID: Method Blank **Matrix: Solid**

Analysis Batch: 38953

					•	Prep Type: Total/N Prep Batch: 388			
MB	MB								
Docult	Qualifier	DI	Unit	n	Propared	Analyzod	Dil Eac		

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/07/22 13:51	11/08/22 10:48	1

MB MB Dil Fac Qualifier Limits Prepared Analyzed Surrogate %Recovery 4-Bromofluorobenzene (Surr) 70 - 130 88 11/07/22 13:51 11/08/22 10:48 70 - 130 11/07/22 13:51 11/08/22 10:48 1,4-Difluorobenzene (Surr)

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

Lab Sample ID: MB 880-38644/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 38690

мв мв Result Qualifier Unit Prepared <50.0 U 50.0 mg/Kg 11/03/22 14:00 11/04/22 21:14 Gasoline Range Organics

(GRO)-C6-C10

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Prep Batch: 38644

Client: Ensolum Job ID: 890-3357-1
Project/Site: REDHEAD 31 FEDCOM 1H SDG: 03D2024104

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

Lab Sample ID: MB 880-38644/1-A

Matrix: Solid

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

Matrix: Solid
Analysis Batch: 38690

MB MB

Prep Type: Total/NA
Prep Batch: 38644

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/04/22 21:14	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 14:00	11/04/22 21:14	1
	MB	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

1-Chlorooctane 93 70 - 130 11/03/22 14:00 11/04/22 21:14 10 0-Terphenyl 91 70 - 130 11/03/22 14:00 11/04/22 21:14 11

Lab Sample ID: LCS 880-38644/2-A

Matrix: Solid

Analysis Batch: 38690

Prep Batch: 38644

Spike LCS LCS

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	828.5		mg/Kg		83	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	996.4		mg/Kg		100	70 - 130	
C10-C28)								

 Surrogate
 %Recovery
 Qualifier
 Limits

 1-Chlorooctane
 93
 70 - 130

 o-Terphenyl
 89
 70 - 130

Lab Sample ID: LCSD 880-38644/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Prep Type: Total/NA

Applyeis Batch: 38690

Analysis Batch: 38690 Prep Batch: 38644
Spike LCSD LCSD %Rec RPD

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	836.1		mg/Kg		84	70 - 130	1	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	984.0		mg/Kg		98	70 - 130	1	20	
C10-C28)										

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: 880-21004-A-5-F MS

Client Sample ID: Matrix Spike

Matrix: Solid Prep Type: Total/NA
Analysis Batch: 38690 Prep Batch: 38644

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<50.0	U	997	838.6		mg/Kg		84	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<50.0	U	997	809.5		mg/Kg		81	70 - 130	
C10-C28)										

Diesel Range Organics (Over C10-C28)	<50.0	U	997	809.5	mg/Kg	81	70 - 130	
	MS	MS						
Surrogate	%Recovery	Qualifier	Limits					
1-Chlorooctane	91		70 - 130					
o-Terphenyl	71		70 - 130					

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Lab Sample ID: 880-21004-A-5-G MSD

Job ID: 890-3357-1

Client: Ensolum Project/Site: REDHEAD 31 FEDCOM 1H SDG: 03D2024104

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

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA Prep Batch: 38644

	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	999	833.8		mg/Kg		83	70 - 130	1	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	999	813.8		mg/Kg		81	70 - 130	1	20

C10-C28)

Matrix: Solid

Analysis Batch: 38690

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	71		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38610/1-A Client Sample ID: Method Blank **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

мв мв

Analyte	Result Qual	illei KL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			11/04/22 20:57	1

Lab Sample ID: LCS 880-38610/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble**

Analysis Batch: 38766

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	260.1		mg/Kg		104	90 - 110	

Lab Sample ID: LCSD 880-38610/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	253.5		mg/Kg		101	90 - 110	3	20	

Lab Sample ID: 890-3357-1 MS Client Sample ID: SS01 **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	6980		2500	9523		ma/Ka		102	90 110	

Lab Sample ID: 890-3357-1 MSD **Client Sample ID: SS01 Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	6980		2500	9610		mg/Kg		106	90 - 110	1	20

QC Association Summary

Client: Ensolum

Project/Site: REDHEAD 31 FEDCOM 1H

Job ID: 890-3357-1 SDG: 03D2024104

GC VOA

Prep Batch: 38813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Total/NA	Solid	5035	
890-3357-2	SS02	Total/NA	Solid	5035	
890-3357-3	SS03	Total/NA	Solid	5035	
MB 880-38813/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38813/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38813/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21092-A-6-C MS	Matrix Spike	Total/NA	Solid	5035	
880-21092-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38884/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Total/NA	Solid	8021B	38813
890-3357-2	SS02	Total/NA	Solid	8021B	38813
890-3357-3	SS03	Total/NA	Solid	8021B	38813
MB 880-38813/5-A	Method Blank	Total/NA	Solid	8021B	38813
MB 880-38884/5-A	Method Blank	Total/NA	Solid	8021B	38884
LCS 880-38813/1-A	Lab Control Sample	Total/NA	Solid	8021B	38813
LCSD 880-38813/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38813
880-21092-A-6-C MS	Matrix Spike	Total/NA	Solid	8021B	38813
880-21092-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38813

Analysis Batch: 39090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Total/NA	Solid	Total BTEX	
890-3357-2	SS02	Total/NA	Solid	Total BTEX	
890-3357-3	SS03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 38644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Total/NA	Solid	8015NM Prep	<u> </u>
890-3357-2	SS02	Total/NA	Solid	8015NM Prep	
890-3357-3	SS03	Total/NA	Solid	8015NM Prep	
MB 880-38644/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38644/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38644/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21004-A-5-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21004-A-5-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Total/NA	Solid	8015B NM	38644
890-3357-2	SS02	Total/NA	Solid	8015B NM	38644
890-3357-3	SS03	Total/NA	Solid	8015B NM	38644
MB 880-38644/1-A	Method Blank	Total/NA	Solid	8015B NM	38644
LCS 880-38644/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38644

QC Association Summary

Client: Ensolum Project/Site: REDHEAD 31 FEDCOM 1H Job ID: 890-3357-1

SDG: 03D2024104

GC Semi VOA (Continued)

Analysis Batch: 38690 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-38644/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38644
880-21004-A-5-F MS	Matrix Spike	Total/NA	Solid	8015B NM	38644
880-21004-A-5-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38644

Analysis Batch: 38869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Total/NA	Solid	8015 NM	
890-3357-2	SS02	Total/NA	Solid	8015 NM	
890-3357-3	SS03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 38610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Soluble	Solid	DI Leach	
890-3357-2	SS02	Soluble	Solid	DI Leach	
890-3357-3	SS03	Soluble	Solid	DI Leach	
MB 880-38610/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38610/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38610/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3357-1 MS	SS01	Soluble	Solid	DI Leach	
890-3357-1 MSD	SS01	Soluble	Solid	DI Leach	

Analysis Batch: 38766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3357-1	SS01	Soluble	Solid	300.0	38610
890-3357-2	SS02	Soluble	Solid	300.0	38610
890-3357-3	SS03	Soluble	Solid	300.0	38610
MB 880-38610/1-A	Method Blank	Soluble	Solid	300.0	38610
LCS 880-38610/2-A	Lab Control Sample	Soluble	Solid	300.0	38610
LCSD 880-38610/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38610
890-3357-1 MS	SS01	Soluble	Solid	300.0	38610
890-3357-1 MSD	SS01	Soluble	Solid	300.0	38610

Project/Site: REDHEAD 31 FEDCOM 1H

Client: Ensolum

Job ID: 890-3357-1 SDG: 03D2024104

Lab Sample ID: 890-3357-1

Matrix: Solid

Client Sample ID: SS01 Date Collected: 11/01/22 10:35

Date Received: 11/01/22 15:05

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	38813	11/07/22 08:38	EL	EET MID
Total/NA	Analysis	8021B		50	5 mL	5 mL	38953	11/09/22 04:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39090	11/09/22 11:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38869	11/07/22 11:43	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38644	11/03/22 14:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38690	11/04/22 23:26	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38610	11/03/22 10:30	СН	EET MID
Soluble	Analysis	300.0		10			38766	11/04/22 21:12	CH	EET MID

Lab Sample ID: 890-3357-2 **Client Sample ID: SS02**

Date Collected: 11/01/22 10:40 Date Received: 11/01/22 15:05

Matrix: Solid

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep 5035 Total/NA 5.02 g 5 mL 38813 11/07/22 08:38 EL EET MID Total/NA 8021B 5 mL 38953 11/09/22 01:37 **EET MID** Analysis 1 5 mL MNR Total/NA Total BTEX 39090 11/09/22 11:30 Analysis 1 A.I **EET MID** Total/NA Analysis 8015 NM 38869 11/07/22 11:43 SM **EET MID** Total/NA 8015NM Prep 38644 11/03/22 14:00 Prep 10.00 g 10 mL DM EET MID Total/NA Analysis 8015B NM 1 uL 1 uL 38690 11/04/22 23:48 SM **EET MID** Soluble 11/03/22 10:30 Leach DI Leach 4.98 g 50 mL 38610 CH **EET MID** Soluble Analysis 300.0 10 38766 11/04/22 21:27 СН **EET MID**

Client Sample ID: SS03 Lab Sample ID: 890-3357-3 Date Collected: 11/01/22 10:45

Date Received: 11/01/22 15:05

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	38813	11/07/22 08:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38953	11/09/22 02:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39090	11/09/22 11:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38869	11/07/22 11:43	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38644	11/03/22 14:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38690	11/05/22 00:09	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	38610	11/03/22 10:30	СН	EET MID
Soluble	Analysis	300.0		10			38766	11/04/22 21:31	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: 890-3357-1 Project/Site: REDHEAD 31 FEDCOM 1H

SDG: 03D2024104

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	NI	ELAP	T104704400-22-24	06-30-23
The following analytes the agency does not of	. ,	ut 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: REDHEAD 31 FEDCOM 1H

Job ID: 890-3357-1

SDG: 03D2024104

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

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Sample Summary

Client: Ensolum

Project/Site: REDHEAD 31 FEDCOM 1H

Job ID: 890-3357-1

SDG: 03D2024104

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Dept
890-3357-1	SS01	Solid	11/01/22 10:35	11/01/22 15:05	0.2
890-3357-2	SS02	Solid	11/01/22 10:40	11/01/22 15:05	0.2
890-3357-3	SS03	Solid	11/01/22 10:45	11/01/22 15:05	0.2

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Environment Testing			6			+		4
Work Order No: www.xenco.com Page of Work Order Comments				1.29 15.		e (W)	Cup	
Work Order No: www.xenco.com Page of www.xenco.com Page of work Order Comments		e) Received by: (Signatur	Relinquished by: (Signatur	Date/Time	e)	ceived by: (Signatur	nature) A Re	Relinquished by: (Sig
Work Order No: Work Order Comments		and conditions and the control versiously negotiated.	subcontractors. It assigns standard terms f such losses are due to circumstances beyonlyzed. These terms will be enforced unless proceed unle	Eurofins Xenco, its affiliates and xpenses incurred by the client if to Eurofins Xenco, but not ana	ler from client company to ansibility for any losses or e for each sample submitted	nstitutes a valid purchase or nd shall not assume any resp ch project and a charge of 55	and relinquishment of samples co ble only for the cost of samples a ge of \$85.00 will be applied to ea	ttice: Signature of this document service. Eurofins Xenco will be li Eurofins Xenco. A minimum cha
House it less than the strength of the strengt	TI Sn U V /7470 /747	li K Se	Ca Cr Co Cu Fe Pb Mg Cr Co Cu Pb Mn Mo Ni Se	Sb As Ba Be B Cd	PLP 6010 : 8RCR	8RCRA 13PI ed TCLP/S	200.8 / 6020: Metal(s) to be analyzo	Total 200.7 / 6010 ircle Method(s) and
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Housen TX 231 304-2300 Mediand, TX (321) 204-2300, Dallas, TX (214) 902-2300 Mediand, TX (321) 204-2400, San Arronio, TX (210) 599-2334 EL Para, TX (915) 585-243, Lubbock, TX (980) 794-1796 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 989-3199 Work Order No: Work	Sample Comments			on of	Grab/ Comp		Matrix	Sample Identificati
Houston, TX (281) 240-2000, Oalis, XX (270) 240-2000 Mediand, TX (281) 240-2000, Oalis, XX (270) 250-3334	NaOH+Ascorbic Acid: SAPC	in of Custody	890-3357 Cha	1 了 Ph/	1-6	rrected Temperature:	Co	tal Containers:
Houston, TX (281) 2404-200, Dallas, TX (214) 290-2900 Midland, TX (821) 2404-200, Dallas, TX (214) 290-2900 Midland, TX (821) 2404-200, Dallas, TX (214) 509-3334 EL Paro, TX (821) 2404-200, Dallas, TX (210) 509-3334 EL Paro, TX (821) 2404-200, TX (806) 794-1296 Hobbs, MM (575) 985-3199 Work Order No: Work Order Comments Work Order Comments Work Order Comments Frogram: UST/PST PRP Brownfields RRC State of Project: Reporting: Level III Level III Level III Preservative CC Preservative CC Preservative CC Preservative CC Lu LOUMING Turn Adund Temp Blank: Ves No Thermometer ID: TW MAOOT Tall PRO 2-14P, Na50 3: MABIS Temp Blank: Ves No Thermometer ID: TW MAOOT Tall PRO 2-14P, Na50 3: MABIS Na 25,0 3: MABIS Na 25,0 3: MABIS Na 25,0 3: MABIS	Zn Acetate+NaOH: Zn			EX H	æ	mperature Reading:	No N/A	mple Custody Seals:
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Houston, TX (281) 240-250 Delbas, XX (271) 90-3000	NaHSO 4: NABIS					ometer ID:		mples Received Intact:
### CUTOFINS Houston, TX (231) 240-200, Dalles, TX (210) 509-3334 Work Order No:	H ₃ PO ₄ : HP			eters	Yes No	ō		MPI F RECEIPT
Houston, TX (28) 20-0300	2				eived by 4:30pm	-7	The local principality	C Statistic
Houston, TX (214) 902-9300	<u>u</u>				day received by	_	202 - 12.12	20
Houston, TX (281) 240-2200, Dallas, TX (214) 902-3300				res.		-	D202411	
Houston, TX (281) 240-4200, Dallas, TX (214) 902-3090	Preservative Codes	ST	ANALYSIS REQUE			1		
## Work Order No: Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300		Dalmerables EDD		Densolum, ec	1 oclaims	57 Email:	08-511-SK	one:
Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300		Reporting: Level II Level III			City, State ZIP:	1 88220	urblood, NM	
Pofins Environment Testing Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Work Order No: Kenco EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlisbad, NM (575) 988-3199 www.xenco.com Page of Work Order Comments Work Order Comments Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐		State of Project:			Address:	ALD HOU	172 Nat 18	
## Pofins Environment Testing	RRC	UST/PST PRP			Company Name:		150 Lim. LC	
Environment Testing Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 Xenco EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 www.xenco.com Page	Comments	Work Order C		2, 2	Bill to: (if different)		USH ADAMS	oject Manager:
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Environment Testing Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334			TX (806) 794-1296	X (915) 585-3443, Lubbock,	EL Paso, 1		Xenco	
		Work Order No:	io, TX (210) 509-3334	(432) 704-5440, San Anton	Houston Midland, T.	ent Testing		S. Caloli
			TV /314/ 903-0300				20	PHYOF

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-3357-1 SDG Number: 03D2024104

Login Number: 3357 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	

Login Sample Receipt Checklist

Client: Ensolum Job Num

Job Number: 890-3357-1 SDG Number: 03D2024104

Login Number: 3357
List Source: Eurofins Midland
List Number: 2
List Creation: 11/03/22 10:17 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	

4

__

5

4

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8

11

12

14

<6mm (1/4").

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams Ensolum 705 W. Wadley Suite 210 Midland Texas 79701

Generated 11/16/2022 2:39:18 PM Revision 1

JOB DESCRIPTION

Redhead 31 FedCom 1H SDG NUMBER 03d2024104

JOB NUMBER

890-3355-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM88220



Client: Ensolum

Laboratory Job ID: 890-3355-1

Project/Site: Redhead 31 FedCom 1H

SDG: 03d2024104

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Definitions/Glossary

Client: Ensolum Job ID: 890-3355-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03d2024104

Qualifiers

GC VOA

Qualifier **Qualifier Description**

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

GC Semi VOA

Qualifier **Qualifier Description**

F2 MS/MSD RPD exceeds control limits

S1-Surrogate recovery exceeds control limits, low 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" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

PQL **Practical Quantitation Limit**

PRES Presumptive QC **Quality Control**

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

Case Narrative

Client: Ensolum

Job ID: 890-3355-1 SDG: 03d2024104 Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3355-1

REVISION

The report being provided is a revision of the original report sent on 11/14/2022. The report (revision 1) is being revised due to Per client email, requesting sample depth correction.

Report revision history

Receipt

The sample was received on 11/1/2022 3:05 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 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SS04 (890-3355-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-39027 and analytical batch 880-39341 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: (890-3350-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-38586 and analytical batch 880-38574 was outside control limits. Sample non-homogeneity is suspected.

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.

Date Collected: 11/01/22 10:50

Client Sample Results

Client: Ensolum Job ID: 890-3355-1
Project/Site: Redhead 31 FedCom 1H SDG: 03d2024104

Client Sample ID: SS04 Lab Samp

Lab Sample ID: 890-3355-1

Matrix: Solid

Date Received: 11/01/22 15:05 Sample Depth: 0.2'bs

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U	0.00201	mg/Kg		11/08/22 16:11	11/12/22 13:27	
Toluene	< 0.00201	U	0.00201	mg/Kg		11/08/22 16:11	11/12/22 13:27	
Ethylbenzene	< 0.00201	U	0.00201	mg/Kg		11/08/22 16:11	11/12/22 13:27	
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		11/08/22 16:11	11/12/22 13:27	
o-Xylene	< 0.00201	U	0.00201	mg/Kg		11/08/22 16:11	11/12/22 13:27	
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/08/22 16:11	11/12/22 13:27	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	105		70 - 130			11/08/22 16:11	11/12/22 13:27	
1,4-Difluorobenzene (Surr)	109		70 - 130			11/08/22 16:11	11/12/22 13:27	
Method: TAL SOP Total BTEX	- Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/14/22 11:06	
	_	•	, , , ,					
	Result	Qualifier	DRO) (GC)	Unit	D	Prepared	Analyzed	Dil Fa
Analyte	_	Qualifier	, , , ,	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 11/04/22 11:08	Dil Fa
Analyte Total TPH	Result <49.9	Qualifier U	RL 49.9		<u>D</u>	Prepared		Dil Fa
Analyte Total TPH Method: SW846 8015B NM - D	Result <49.9	Qualifier U	RL 49.9		<u>D</u>	Prepared Prepared		
Analyte Total TPH Method: SW846 8015B NM - Description Analyte Gasoline Range Organics	Result <49.9	Qualifier U Organics Qualifier	RL 49.9 (DRO) (GC)	mg/Kg	_ =		11/04/22 11:08	
Analyte Total TPH Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <49.9 Diesel Range Result	Qualifier U Organics Qualifier U	RL 49.9 (DRO) (GC) RL	mg/Kg Unit	_ =	Prepared 11/03/22 08:35	11/04/22 11:08 Analyzed	
Analyte Total TPH Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <49.9 Diesel Range Result <49.9	Qualifier U Organics Qualifier U	RL 49.9 (DRO) (GC) RL 49.9	mg/Kg Unit mg/Kg	_ =	Prepared 11/03/22 08:35 11/03/22 08:35	11/04/22 11:08 Analyzed 11/04/22 04:30	
Analyte Total TPH Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <49.9 Diesel Range Result <49.9 <49.9	Qualifier U Organics Qualifier U U	RL 49.9 (DRO) (GC) RL 49.9 49.9	mg/Kg Unit mg/Kg mg/Kg	_ =	Prepared 11/03/22 08:35 11/03/22 08:35	11/04/22 11:08 Analyzed 11/04/22 04:30 11/04/22 04:30	Dil Fa
Analyte Total TPH Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result	Qualifier U Organics Qualifier U U	RL 49.9 (DRO) (GC) RL 49.9 49.9 49.9	mg/Kg Unit mg/Kg mg/Kg	_ =	Prepared 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35	11/04/22 11:08 Analyzed 11/04/22 04:30 11/04/22 04:30 11/04/22 04:30	Dil Fa
Analyte Total TPH Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	Result <49.9 Diesel Range Result <49.9 <49.9 <49.9 %Recovery	Qualifier U Organics Qualifier U U	RL 49.9 (DRO) (GC) RL 49.9 49.9 49.9 Limits	mg/Kg Unit mg/Kg mg/Kg	_ =	Prepared 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared 11/03/22 08:35	Analyzed 11/04/22 04:30 11/04/22 04:30 11/04/22 04:30 Analyzed 11/04/22 04:30	Dil Fa
Method: SW846 8015 NM - Did Analyte Total TPH Method: SW846 8015B NM - Did 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 - Anid	Result <49.9	Qualifier U Organics Qualifier U U U Qualifier	RL 49.9 (DRO) (GC) RL 49.9 49.9 49.9 Limits 70 - 130 70 - 130	mg/Kg Unit mg/Kg mg/Kg	_ =	Prepared 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared 11/03/22 08:35	Analyzed 11/04/22 04:30 11/04/22 04:30 11/04/22 04:30 Analyzed 11/04/22 04:30	Dil Fa
Analyte Total TPH Method: SW846 8015B NM - E 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 <49.9	Qualifier U Organics Qualifier U U U Qualifier	RL 49.9 (DRO) (GC) RL 49.9 49.9 49.9 Limits 70 - 130 70 - 130	mg/Kg Unit mg/Kg mg/Kg	_ =	Prepared 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared 11/03/22 08:35	Analyzed 11/04/22 04:30 11/04/22 04:30 11/04/22 04:30 Analyzed 11/04/22 04:30	Dil Fa

Surrogate Summary

Client: Ensolum Job ID: 890-3355-1 SDG: 03d2024104 Project/Site: Redhead 31 FedCom 1H

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

			Perc	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-21091-A-1-B MS	Matrix Spike	102	106	
880-21091-A-1-C MSD	Matrix Spike Duplicate	95	107	
890-3355-1	SS04	105	109	
LCS 880-39027/1-A	Lab Control Sample	106	95	
LCSD 880-39027/2-A	Lab Control Sample Dup	105	92	
MB 880-39027/5-A	Method Blank	78	107	
MB 880-39319/5-A	Method Blank	83	104	

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

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

Matrix: Solid Prep Type: Total/NA

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)	rrogate Recovery (Acceptance Limits)
890-3350-A-1-E MS	Matrix Spike	67 S1-	61 S1-	
890-3350-A-1-F MSD	Matrix Spike Duplicate	85	74	
890-3355-1	SS04	85	81	
LCS 880-38586/2-A	Lab Control Sample	99	89	
LCSD 880-38586/3-A	Lab Control Sample Dup	105	105	
MB 880-38586/1-A	Method Blank	83	80	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3355-1 Project/Site: Redhead 31 FedCom 1H SDG: 03d2024104

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-39027/5-A

Matrix: Solid

Analysis Batch: 39341

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 39027

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/08/22 16:11	11/12/22 07:03	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78	70 - 130	11/08/22 16:11	11/12/22 07:03	1
1,4-Difluorobenzene (Surr)	107	70 - 130	11/08/22 16:11	11/12/22 07:03	1

Lab Sample ID: LCS 880-39027/1-A

Matrix: Solid

Analysis Batch: 39341

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 39027

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.07571		mg/Kg		76	70 - 130	
Toluene	0.100	0.09356		mg/Kg		94	70 - 130	
Ethylbenzene	0.100	0.09403		mg/Kg		94	70 - 130	
m-Xylene & p-Xylene	0.200	0.1772		mg/Kg		89	70 - 130	
o-Xylene	0.100	0.08717		mg/Kg		87	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1,4-Difluorobenzene (Surr)	95	70 - 130

Lab Sample ID: LCSD 880-39027/2-A

Matrix: Solid

Analysis Batch: 39341

Client Sample	ID: Lab	Control	Sample	Dup
----------------------	---------	----------------	---------------	-----

Prep Type: Total/NA

Prep Batch: 39027

	Spike	LCSD LC	CSD				%Rec		RPD
Analyte	Added	Result Q	ualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07849		mg/Kg		78	70 - 130	4	35
Toluene	0.100	0.09571		mg/Kg		96	70 - 130	2	35
Ethylbenzene	0.100	0.09765		mg/Kg		98	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.1832		mg/Kg		92	70 - 130	3	35
o-Xylene	0.100	0.09148		mg/Kg		91	70 - 130	5	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-21091-A-1-B MS

Matrix: Solid

Analysis Batch: 39341

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

Prep Batch: 39027

,										
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U F1	0.100	0.06156	F1	mg/Kg		61	70 - 130	
Toluene	< 0.00201	U F1	0.100	0.04801	F1	ma/Ka		48	70 - 130	

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1

SDG: 03d2024104

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

Lab Sample ID: 880-21091-A-1-B MS

Lab Sample ID: 880-21091-A-1-C MSD

Matrix: Solid

Matrix: Solid

Analysis Batch: 39341

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 39027

•	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00201	U F1	0.100	0.02010	F1	mg/Kg		20	70 - 130	
m-Xylene & p-Xylene	<0.00402	U F1	0.201	0.07030	F1	mg/Kg		35	70 - 130	
o-Xylene	<0.00201	U F1	0.100	0.04233	F1	mg/Kg		42	70 - 130	
	MS	MS								
•	0/5	.								

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 39027

RPD

Analysis Batch: 39341 Sample Sample Spike MSD MSD %Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.0996 70 - 130 Benzene <0.00201 U F1 0.06863 F1 mg/Kg 69 35 11 Toluene <0.00201 UF1 0.0996 0.05319 F1 53 70 - 130 10 35 mg/Kg 0.0996 Ethylbenzene <0.00201 UF1 0.02587 F1 mg/Kg 26 70 - 130 25 35 m-Xylene & p-Xylene <0.00402 U F1 0.199 0.07210 F1 mg/Kg 36 70 - 130 3 35 <0.00201 UF1 0.0996 0.04135 F1 42 70 - 130 2 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	95	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: MB 880-39319/5-A **Client Sample ID: Method Blank Matrix: Solid**

Analysis Batch: 39341

Prep Type: Total/NA

Prep Batch: 39319

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/11/22 10:54	11/11/22 19:27	1

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130	11/11/22 10:54	11/11/22 19:27	1
1,4-Difluorobenzene (Surr)	104		70 - 130	11/11/22 10:54	11/11/22 19:27	1

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

Lab Sample ID: MB 880-38586/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 38574

MB MB Result Qualifier RL Unit Analyte Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 mg/Kg 11/03/22 08:35 11/03/22 22:42

(GRO)-C6-C10

Eurofins Carlsbad

Prep Batch: 38586

Client: Ensolum Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1

SDG: 03d2024104

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

Lab Sample ID: MB 880-38586/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 38574** Prep Batch: 38586

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1
	MB	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130			11/03/22 08:35	11/03/22 22:42	1

o-Terphenyl 80 70 - 130 11/03/22 08:35 11/03/22 22:42 Lab Sample ID: LCS 880-38586/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 38574** Prep Batch: 38586 LCS LCS Spike %Rec Added Result Qualifier Limits Analyte Unit %Rec 887.3 Gasoline Range Organics 1000 mg/Kg 89 70 - 130 (GRO)-C6-C10 mg/Kg 70 - 130 Diesel Range Organics (Over 1000 1144 114 C10-C28) LCS LCS Surrogate Qualifier Limits %Recovery 70 - 130 1-Chlorooctane 99 o-Terphenyl 89 70 - 130 Lab Sample ID: LCSD 880-38586/3-A Client Sample ID: Lab Control Sample Dun

Lab Sample ID. LCSD 000-30300/3-A	sb dample ib. Loop 600-30300/3-A					ample ib. Lab control sample bup				
Matrix: Solid							Prep Ty	pe: Tot	al/NA	
Analysis Batch: 38574							Prep Batch: 38586			
	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	1000	1084		mg/Kg		108	70 - 130	20	20	
Diesel Range Organics (Over C10-C28)	1000	1300		mg/Kg		130	70 - 130	13	20	

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

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Lab Sample ID: 890-3350-A-1-E MS **Client Sample ID: Matrix Spike Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 38574** Prep Batch: 38586 Spike MS MS %Rec Sample Sample **Analyte** Result Qualifier Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 59.2 997 819.8 76 70 - 130 mg/Kg (GRO)-C6-C10 <50.0 U F2 997 747.7 mg/Kg 75 70 - 130 Diesel Range Organics (Over C10-C28) MS MS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 67 S1-70 - 130 o-Terphenyl 61 S1-70 - 130

Client: Ensolum Job ID: 890-3355-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03d2024104

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

Lab Sample ID: 890-3350-A-1-F MSD **Client Sample ID: Matrix Spike Duplicate**

Matrix: Solid

Analysis Batch: 38574

Prep Type: Total/NA Prep Batch: 38586 %Rec **RPD**

Sample Sample Spike MSD MSD Result Qualifier Result Qualifier Added %Rec Limits RPD Limit Analyte Unit D Gasoline Range Organics 59.2 999 958.5 mg/Kg 90 70 - 130 16 20 (GRO)-C6-C10 <50.0 U F2 999 926.8 F2 93 Diesel Range Organics (Over mg/Kg 70 - 13021 20 C10-C28)

MSD MSD

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 85 74 70 - 130 o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38521/1-A Client Sample ID: Method Blank **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

MB MB

Result Qualifier RL Unit Analyte Prepared Dil Fac Analyzed 5.00 Chloride <5.00 U mg/Kg 11/05/22 18:57

Lab Sample ID: LCS 880-38521/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

Spike LCS LCS %Rec Analyte Added Result Qualifier Limits Unit D %Rec Chloride 250 260.8 104 90 - 110 mg/Kg

Lab Sample ID: LCSD 880-38521/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

LCSD LCSD RPD Spike %Rec **Analyte** Added Result Qualifier Unit D %Rec Limits RPD Limit Chloride 250 263.3 105 90 - 110 mg/Kg

Lab Sample ID: 880-21018-A-2-B MS

Matrix: Solid

Analysis Batch: 38782

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 90 - 110 Chloride 97 7 249 343.7 mg/Kg

Lab Sample ID: 880-21018-A-2-C MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

MSD MSD %Rec **RPD** Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit D 249 97.7 340.4 97 90 - 110 Chloride mg/Kg

Eurofins Carlsbad

Client Sample ID: Matrix Spike

Prep Type: Soluble

QC Association Summary

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1 SDG: 03d2024104

GC VOA

Prep Batch: 39027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Total/NA	Solid	5035	
MB 880-39027/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39027/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39027/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21091-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-21091-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 39319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-39319/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 39341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Total/NA	Solid	8021B	39027
MB 880-39027/5-A	Method Blank	Total/NA	Solid	8021B	39027
MB 880-39319/5-A	Method Blank	Total/NA	Solid	8021B	39319
LCS 880-39027/1-A	Lab Control Sample	Total/NA	Solid	8021B	39027
LCSD 880-39027/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39027
880-21091-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	39027
880-21091-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	39027

Analysis Batch: 39431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38574

Lab Sample ID 890-3355-1	Client Sample ID SS04	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 38586
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015B NM	38586
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38586
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38586
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	38586
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38586

Prep Batch: 38586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1 SDG: 03d2024104

HPLC/IC

Leach Batch: 38521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Soluble	Solid	DI Leach	
MB 880-38521/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38521/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38521/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-21018-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-21018-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 38782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3355-1	SS04	Soluble	Solid	300.0	38521
MB 880-38521/1-A	Method Blank	Soluble	Solid	300.0	38521
LCS 880-38521/2-A	Lab Control Sample	Soluble	Solid	300.0	38521
LCSD 880-38521/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38521
880-21018-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	38521
880-21018-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38521

2

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11

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Date Received: 11/01/22 15:05

Lab Chronicle

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1

SDG: 03d2024104

Client Sample ID: SS04 Lab
Date Collected: 11/01/22 10:50

Lab Sample ID: 890-3355-1

11/07/22 17:43 CH

Matrix: Solid

EET MID

	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	39027	11/08/22 16:11	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39341	11/12/22 13:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39431	11/14/22 11:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			38726	11/04/22 11:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	38586	11/03/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38574	11/04/22 04:30	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	38521	11/04/22 11:58	CH	EET MID

50 mL

38782

50 mL

Laboratory References:

Analysis

Soluble

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

300.0

6

8

9

11

13

14

Accreditation/Certification Summary

Client: Ensolum Job ID: 890-3355-1 Project/Site: Redhead 31 FedCom 1H SDG: 03d2024104

Laboratory: Eurofins Midland

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

Authority Texas		ogram ELAP	Identification Number	Expiration Date 06-30-23
The following analyte	•	ort, but the laboratory is r	not certified by the governing authority.	This list may include analytes for
J -,	oner certification.			
Analysis Method	Prep Method	Matrix	Analyte	
0 ,		Matrix Solid	Analyte Total TPH	

Method Summary

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3355-1

SDG: 03d2024104

/lethod	Method Description	Protocol	Laboratory
3021B	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
800.0	Anions, Ion Chromatography	MCAWW	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
015NM Prep	Microextraction	SW846	EET MID
Ol 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: Redhead 31 FedCom 1H

Job ID: 890-3355-1 SDG: 03d2024104

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Depth

 890-3355-1
 SS04
 Solid
 11/01/22 10:50
 11/01/22 15:05
 11/01/22 15:05
 0.2'bs

3

4

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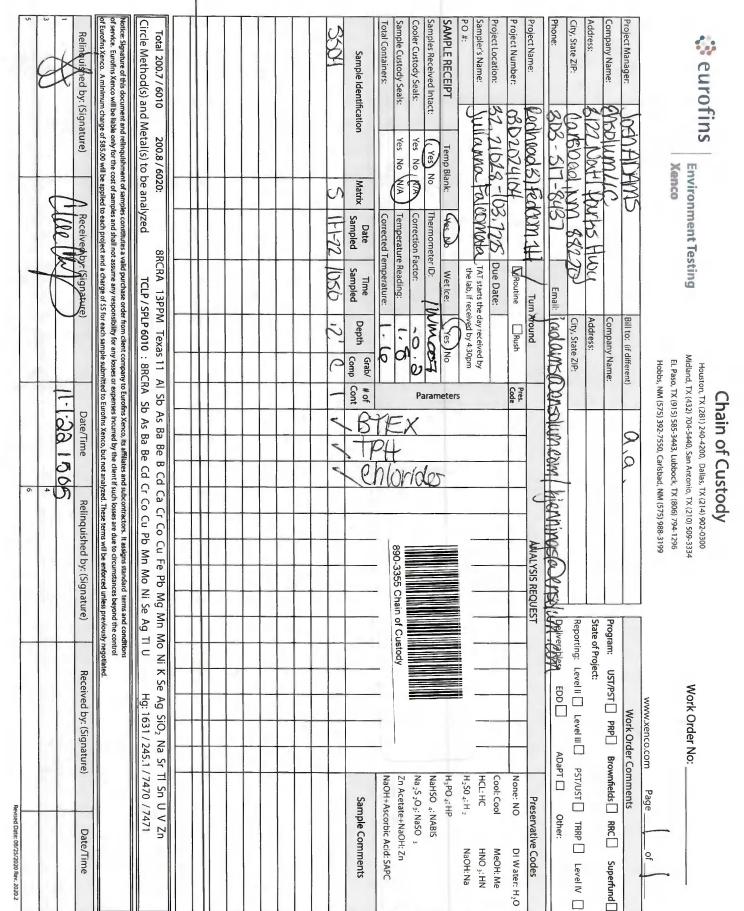
9

10

12

-

4 -



Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-3355-1 SDG Number: 03d2024104

Login Number: 3355 **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	

Eurofins Carlsbad

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Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-3355-1 SDG Number: 03d2024104

Login Number: 3355 **List Source: Eurofins Midland** List Creation: 11/03/22 10:17 AM 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	
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	N/A	

<6mm (1/4").

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 11/16/2022 2:39:18 PM Revision 1

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

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Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3356-1

Laboratory Sample Delivery Group: 03D2024104 Client Project/Site: Redhead 31 FedCom 1H

For:

💸 eurofins

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

MEAMER

Authorized for release by: 11/14/2022 11:58:26 AM

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

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

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.



.....LINKS

Review your project results through

EOL

Have a Question?

www.eurofinsus.com/Env

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Visit us at:

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

Client: Ensolum Laboratory Job ID: 890-3356-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

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Definitions/Glossary

Job ID: 890-3356-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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**

F2 MS/MSD RPD exceeds control limits

S1-Surrogate recovery exceeds control limits, low 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: 890-3356-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

Job ID: 890-3356-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3356-1

Receipt

The sample was received on 11/1/2022 3:05 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 1.6°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS05 (890-3356-1).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-39027 and analytical batch 880-39341 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: (890-3350-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-38586 and analytical batch 880-38574 was outside control limits. Sample non-homogeneity is suspected.

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.

Matrix: Solid

Lab Sample ID: 890-3356-1

Client Sample Results

Client: Ensolum Job ID: 890-3356-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Client Sample ID: SS05

Date Collected: 11/01/22 10:55 Date Received: 11/01/22 15:05

Sample Depth: 0.2'

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/08/22 16:11	11/12/22 13:47	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/08/22 16:11	11/12/22 13:47	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		11/08/22 16:11	11/12/22 13:47	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/08/22 16:11	11/12/22 13:47	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		11/08/22 16:11	11/12/22 13:47	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/08/22 16:11	11/12/22 13:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			11/08/22 16:11	11/12/22 13:47	1
1,4-Difluorobenzene (Surr)	110		70 - 130			11/08/22 16:11	11/12/22 13:47	1
Method: TAL SOP Total BTEX -	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/14/22 11:06	1
Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (GC)					
Method: SW846 8015 NM - Diese Analyte		ics (DRO) (GC)	Unit	D	Prepared	Analyzed	Dil Fac
		Qualifier	•	<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared	Analyzed 11/04/22 11:08	Dil Fac
Analyte	Result <50.0	Qualifier U	RL 50.0		<u>D</u>	Prepared		Dil Fac
Analyte Total TPH	Result <50.0 sel Range Orga	Qualifier U	RL 50.0		<u>D</u>	Prepared Prepared		Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die Analyte Gasoline Range Organics	Result <50.0 sel Range Orga	Qualifier U unics (DRO) Qualifier	RL 50.0	mg/Kg			11/04/22 11:08	Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die Analyte	Result <50.0 seel Range Orga	Qualifier U unics (DRO) Qualifier U	RL 50.0 (GC)	mg/Kg		Prepared	11/04/22 11:08 Analyzed	1
Analyte Total TPH Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10	Result <50.0 See Range Orga Result <50.0	Qualifier U unics (DRO) Qualifier U	RL 50.0 (GC) RL 50.0	mg/Kg Unit mg/Kg		Prepared 11/03/22 08:35	11/04/22 11:08 Analyzed 11/04/22 04:52	Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <50.0 See Range Orga Result <50.0	Qualifier U unics (DRO) Qualifier U	RL 50.0 (GC) RL 50.0	mg/Kg Unit mg/Kg		Prepared 11/03/22 08:35	11/04/22 11:08 Analyzed 11/04/22 04:52	Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result	Qualifier U unics (DRO) Qualifier U U	RL 50.0 (GC) RL 50.0 50.0	mg/Kg Unit mg/Kg mg/Kg		Prepared 11/03/22 08:35 11/03/22 08:35	11/04/22 11:08 Analyzed 11/04/22 04:52 11/04/22 04:52	1 Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0	Qualifier U unics (DRO) Qualifier U U	RL 50.0 (GC) RL 50.0 50.0	mg/Kg Unit mg/Kg mg/Kg		Prepared 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35	Analyzed 11/04/22 04:52 11/04/22 04:52 11/04/22 04:52	Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result <50.0	Qualifier U unics (DRO) Qualifier U U	RL 50.0 (GC) RL 50.0 50.0 50.0 Limits	mg/Kg Unit mg/Kg mg/Kg		Prepared 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared	Analyzed 11/04/22 04:52 11/04/22 04:52 11/04/22 04:52 Analyzed	Dil Fac
Analyte Total TPH Method: SW846 8015B NM - Die 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	Qualifier U Inics (DRO) Qualifier U 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 11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared 11/03/22 08:35	Analyzed 11/04/22 04:52 11/04/22 04:52 11/04/22 04:52 Analyzed 11/04/22 04:52	1 Dil Fac 1 1 1 1 Dil Fac

5.00

mg/Kg

37.2

Eurofins Carlsbad

11/07/22 17:50

Surrogate Summary

Client: Ensolum Job ID: 890-3356-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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)	
880-21091-A-1-B MS	Matrix Spike	102	106	
880-21091-A-1-C MSD	Matrix Spike Duplicate	95	107	
890-3356-1	SS05	102	110	
LCS 880-39027/1-A	Lab Control Sample	106	95	
LCSD 880-39027/2-A	Lab Control Sample Dup	105	92	
MB 880-39027/5-A	Method Blank	78	107	
MB 880-39319/5-A	Method Blank	83	104	

DFBZ = 1,4-Difluorobenzene (Surr)

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

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

-				Percent Surrogate Rec
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3350-A-1-E MS	Matrix Spike	67 S1-	61 S1-	
890-3350-A-1-F MSD	Matrix Spike Duplicate	85	74	
890-3356-1	SS05	102	93	
LCS 880-38586/2-A	Lab Control Sample	99	89	
LCSD 880-38586/3-A	Lab Control Sample Dup	105	105	
MB 880-38586/1-A	Method Blank	83	80	
Surrogate Legend				
1CO = 1-Chlorooctane				

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3356-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-39027/5-A

Matrix: Solid Analysis Batch: 39341 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 39027

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/08/22 16:11	11/12/22 07:03	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/08/22 16:11	11/12/22 07:03	1

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130	11/08/22 16:1	1 11/12/22 07:03	1
1,4-Difluorobenzene (Surr)	107		70 - 130	11/08/22 16:1	1 11/12/22 07:03	1

Lab Sample ID: LCS 880-39027/1-A **Client Sample ID: Lab Control Sample**

Matrix: Solid

Analysis Batch: 39341

Prep Type: Total/NA

Prep Batch: 39027

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.07571		mg/Kg		76	70 - 130	
Toluene	0.100	0.09356		mg/Kg		94	70 - 130	
Ethylbenzene	0.100	0.09403		mg/Kg		94	70 - 130	
m-Xylene & p-Xylene	0.200	0.1772		mg/Kg		89	70 - 130	
o-Xylene	0.100	0.08717		mg/Kg		87	70 - 130	

Spike

Added

0.100

0.100

0.100

0.200

0.100

LCSD LCSD

0.07849

0.09571

0.09765

0.1832

0.09148

Result Qualifier

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-39027/2-A

Matrix: Solid

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

Analysis Batch: 39341

Client Sample	ID: Lab	Control	Sample	Dup
---------------	---------	---------	--------	-----

70 - 130

70 - 130

92

Prep Type: Total/NA Prep Batch: 39027

RPD %Rec %Rec Limits Limit 78 70 - 130 35 96 70 - 130 2 35 98 70 - 130 35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-21091-A-1-B MS

Matrix: Solid

Analysis Batch: 39341

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

35

35

Prep Batch: 39027

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U F1	0.100	0.06156	F1	mg/Kg		61	70 - 130	
Toluene	<0.00201	U F1	0.100	0.04801	F1	mg/Kg		48	70 - 130	

QC Sample Results

Job ID: 890-3356-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: 880-21091-A-1-B MS

Lab Sample ID: 880-21091-A-1-C MSD

Matrix: Solid

Matrix: Solid

o-Xylene

Analysis Batch: 39341

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 39027

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00201 U F1 0.100 0.02010 F1 20 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00402 U F1 0.201 0.07030 F1 mg/Kg 35 70 - 130 0.100 42 o-Xylene <0.00201 UF1 0.04233 F1 70 - 130 mg/Kg

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Client Sample ID: Matrix Spike Duplicate

70 - 130

42

Prep Type: Total/NA

Prep Batch: 39027 RPD

2

Analysis Batch: 39341 Sample Sample Spike MSD MSD Result Qualifier Result Qualifier %Rec RPD Limit Analyte babbA Unit Limits 0.0996 Benzene <0.00201 UF1 0.06863 F1 mg/Kg 69 70 - 130 11 35 Toluene <0.00201 UF1 0.0996 0.05319 F1 mg/Kg 53 70 - 130 10 35 Ethylbenzene <0.00201 UF1 0.0996 0.02587 F1 26 70 - 130 25 35 mg/Kg 0.199 0.07210 F1 36 70 - 130 35 m-Xylene & p-Xylene <0.00402 U F1 mg/Kg 3

0.04135 F1

mg/Kg

0.0996

MSD MSD

<0.00201 UF1

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	95	70 - 130
1 4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: MB 880-39319/5-A **Matrix: Solid**

Analysis Batch: 39341

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 39319

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/11/22 10:54	11/11/22 19:27	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/11/22 10:54	11/11/22 19:27	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130	11/11/22 10:5	11/11/22 19:27	1
1,4-Difluorobenzene (Surr)	104		70 - 130	11/11/22 10:5	54 11/11/22 19:27	1

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

Lab Sample ID: MB 880-38586/1-A

Matrix: Solid

Analysis Batch: 38574

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

Prep Batch: 38586

мв мв Analyte Result Qualifier RL Unit Prepared Analyzed <50.0 U 50.0 mg/Kg 11/03/22 08:35 11/03/22 22:42 Gasoline Range Organics

(GRO)-C6-C10

Client: Ensolum Job ID: 890-3356-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: MB 880-38586/1-A **Matrix: Solid**

Analysis Batch: 38574

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 38586

ı		IIID	IVID													
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac							
	Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1							
	Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1							

MB MB

MR MR

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1-Chlorooctane	83		70 - 130	11/03/22 08:35	11/03/22 22:42	1
Į	o-Terphenyl	80		70 - 130	11/03/22 08:35	11/03/22 22:42	1

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 880-38586/2-A **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 38574 Prep Batch: 38586

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 887.3 89 70 - 130 mg/Kg (GRO)-C6-C10 1000 Diesel Range Organics (Over 1144 mg/Kg 114 70 - 130C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: LCSD 880-38586/3-A

Matrix: Solid

Analysis Batch: 38574

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

Prep Batch: 38586

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	1084		mg/Kg		108	70 - 130	20	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	1300		mg/Kg		130	70 - 130	13	20
C10-C28)									

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

Lab Sample ID: 890-3350-A-1-E MS

Matrix: Solid

Analysis Batch: 38574

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 38586

MS MS Spike %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 59.2 997 819.8 76 70 - 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 997 747.7 Diesel Range Organics (Over <50.0 U F2 mg/Kg 75 70 - 130

C10-C28)

	IVIS	IVIS						
Surrogate	%Recovery	Qualifier	Limits					
1-Chlorooctane	67	S1-	70 - 130					
o-Terphenyl	61	S1-	70 - 130					

QC Sample Results

Job ID: 890-3356-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: 890-3350-A-1-F MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Analysis Batch: 38574 Prep Type: Total/NA Prep Batch: 38586

Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 59.2 999 958.5 mg/Kg 90 70 - 130 16 20 (GRO)-C6-C10 999 926.8 F2 Diesel Range Organics (Over <50.0 U F2 93 70 - 130 mg/Kg 21

C10-C28)

MSD MSD

Surrogate	%Recovery Q	ualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	74		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38521/1-A Client Sample ID: Method Blank **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

мв мв

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			11/05/22 18:57	1

Lab Sample ID: LCS 880-38521/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble**

Analysis Batch: 38782

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	260.8		mg/Kg		104	90 - 110	

Lab Sample ID: LCSD 880-38521/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	263.3		mg/Kg		105	90 - 110	1	20	

Lab Sample ID: 880-21018-A-2-B MS Client Sample ID: Matrix Spike **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38782

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	97.7		249	343.7		mg/Kg		99	90 - 110	

Lab Sample ID: 880-21018-A-2-C MSD

Matrix: Solid

Analysis Batch: 38782

Analysis Daton. 30702											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	97.7		249	340.4		mg/Kg		97	90 - 110	1	20

Eurofins Carlsbad

Prep Type: Soluble

Client Sample ID: Matrix Spike Duplicate

QC Association Summary

Client: Ensolum Job ID: 890-3356-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

GC VOA

Prep Batch: 39027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Total/NA	Solid	5035	
MB 880-39027/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39027/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39027/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21091-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-21091-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 39319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-39319/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 39341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Total/NA	Solid	8021B	39027
MB 880-39027/5-A	Method Blank	Total/NA	Solid	8021B	39027
MB 880-39319/5-A	Method Blank	Total/NA	Solid	8021B	39319
LCS 880-39027/1-A	Lab Control Sample	Total/NA	Solid	8021B	39027
LCSD 880-39027/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39027
880-21091-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	39027
880-21091-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	39027

Analysis Batch: 39432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Total/NA	Solid	8015B NM	38586
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015B NM	38586
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38586
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38586
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	38586
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38586

Prep Batch: 38586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Total/NA	Solid	8015NM Prep	
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum Job ID: 890-3356-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

HPLC/IC

Leach Batch: 38521

Lab Sample ID 890-3356-1	Client Sample ID SS05	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-38521/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38521/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38521/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-21018-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-21018-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 38782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3356-1	SS05	Soluble	Solid	300.0	38521
MB 880-38521/1-A	Method Blank	Soluble	Solid	300.0	38521
LCS 880-38521/2-A	Lab Control Sample	Soluble	Solid	300.0	38521
LCSD 880-38521/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38521
880-21018-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	38521
880-21018-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38521

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Lab Chronicle

Client: Ensolum Job ID: 890-3356-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Client Sample ID: SS05

Lab Sample ID: 890-3356-1

Matrix: Solid

EET MID

Date Collected: 11/01/22 10:55 Date Received: 11/01/22 15:05

	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	39027	11/08/22 16:11	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39341	11/12/22 13:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39432	11/14/22 11:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			38727	11/04/22 11:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38586	11/03/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38574	11/04/22 04:52	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	38521	11/04/22 11:58	CH	EET MID

50 mL

50 mL

38782

11/07/22 17:50

СН

Laboratory References:

Analysis

Soluble

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

300.0

Eurofins Carlsbad

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Accreditation/Certification Summary

Client: Ensolum Job ID: 890-3356-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Laboratory: Eurofins Midland

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

Authority Texas		ogram	Identification Number	Expiration Date
		ELAP	T104704400-22-24	06-30-23
The following analytes	are included in this report, bu	it the laboratory is not certific	ed by the governing authority. This list ma	av include analytes for
the agency does not of	fer certification.	•	, , ,	·, ·····
the agency does not of Analysis Method	fer certification . Prep Method	Matrix	Analyte	,
0 ,		Matrix Solid	, , ,	

Method Summary

Client: Ensolum Job ID: 890-3356-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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: Redhead 31 FedCom 1H

Job ID: 890-3356-1

SDG: 03D2024104

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3356-1	SS05	Solid	11/01/22 10:55	11/01/22 15:05	0.2'

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Chain of Custody

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		12.1.75.0	The state of the s	The state of the		
			1.1			
Date/Time	ignature) Received by: (Signature)	Date/Time Relinquished by: (Signature)	(e)	Received by; (Signature)	hed by: (Signature)	Relinquitheg
	ed unless previously negotiated.	of service. Europhis Aenco will be lable only for the cost of samples and shall not assume any responsibility to sample submitted to Europhis Aenco, A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Europhis Xenco, but not analyzed. These terms will be enforced unless previously negotians are considered to each project and a charge of \$5 for each sample submitted to Europhis Xenco, but not analyzed. These terms will be enforced unless previously negotians.	onsiding for any losses or expenses for each sample submitted to Eu	to each project and a charge of \$	mum charge of \$85.00 will be applied	of Eurofins Xenco. A mini
	ard terms and conditions	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	der from client company to Eurofi	ples constitutes a valid purchase o	locument and relinquishment of samp	Notice: Signature of this o
470 / 7471	Ag TI U Hg: 1631/245.1/7	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni So	6010 : 8RCRA	SRCR	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Circle Method(s) ar
11 V 75	Ma Ma Ma Ni V sa Aa sio Na sa Ti	* B B D C C C C C C C		11 1		
		~	1000	11-1-22 1085	U	5500
Sample Comments		2	Ω 6 ¥	Date Sampled	>	Sample Identification
NaOH+Ascorbic Acid: SAPC	Na OH	Str	1.10	Corrected Temperature:		Total Containers:
Zn Acetate+NaOH: Zn	Chain of Custody Zn Ac	E + 0 890-3356 C	8	Temperature Reading:	als: Yes No (NLA	Sample Custody Seals:
Na ₂ S ₂ O ₃ : NaSO ₃	Na ₂ S	X	P	Correction Factor:	ls: Yes No M/A	Cooler Custody Seals:
NaHSO 4: NABIS	NaHSi	lo«	T DM-DD-7	Thermometer ID:		Samples Received Intact:
) ₄ :HP	H ₃ PO ₄ : HP	5_	Yes No	(Yes No Wet Ice:	Temp Blank:	SAMPLE RECEIPT
4: H ₂ NaOH: Na	H ₂ SO ₄ :H ₂		the lab, if received by 4:30pm		1	PO #:
HC HNO 3: HN	HCL: HC		e day received by	Company	WILLIAM DILLI	Sampler's Name:
Cool MeOH: Me	Cool: Cool			3. 77.5 Due Date:	27,21076,-10	Project Location:
e: NO DI Water: H ₂ O	None: NO		Rush Code	Routine	120202010H	Project Number:
Preservative Codes		ANALYSIS REQUEST	Turn Around	/ IT	Madwad Station	Project Name:
Other:	Of Boding Dalby Gables: EDD ADaPT	ersoum.com Henningsou	Colomas	Email:	33-517-846	Phone:
PST/UST TRRP Level IV	Reporting: Level II Level III PST/UST		City, State ZIP:	JM 48270	(butshed)	City, State ZIP:
i			Address:	Orks Huy	301 Nout	Address:
ds ☐ RRC ☐ Superfund ☐	Program: UST/PST PRP Brownfields		Company Name:	C	11 mulosage	Company Name:
nts	Work Order Comments	20	Bill to: (if different)	3	LIDSH ADAM	Project Manager:
Page of	www.xenco.com Pa					
-		EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	EL Paso, TX (9) Hobbs, NM (57		Aenco	
	WOIR Older No.	Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334	Midland, IX (43)	micht lesting	< FI	
	Work Order No:	Houston, IX (281) 240-4200, Dallas, IX (214) 902-0300	Houston, IX (Environment Testing		
		781) 740,4700 Dallas TY (714) 907,0700	TY (eurofins	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3356-1

SDG Number: 03D2024104

Login Number: 3356 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 True tampered with. Samples were received on ice. True True Cooler Temperature is acceptable. 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 True HTs) True Sample containers have legible labels. 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 N/A Sample Preservation Verified. There is sufficient vol. for all requested analyses, incl. any requested True MS/MSDs Containers requiring zero headspace have no headspace or bubble is N/A

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<6mm (1/4").

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-3356-1

SDG Number: 03D2024104

Login Number: 3356 **List Source: Eurofins Midland** List Number: 2 List Creation: 11/03/22 10:17 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	

<6mm (1/4").



ANALYTICAL REPORT

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

Laboratory Job ID: 890-3358-1

Laboratory Sample Delivery Group: 03D2024104 Client Project/Site: Redhead 31 FedCom 1H

For:

💸 eurofins

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

KRAMER

Authorized for release by: 11/9/2022 11:43:15 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

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.



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Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Laboratory Job ID: 890-3358-1

SDG: 03D2024104

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Definitions/Glossary

Job ID: 890-3358-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Qualifiers

GC VOA Qualifier

F1 MS and/or MSD recovery exceeds control limits.

Qualifier Description F2 MS/MSD RPD exceeds control limits

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description**

F2 MS/MSD RPD exceeds control limits

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

HPLC/IC

Qualifier **Qualifier Description**

U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These	comm	only us	ed at	brevi	atio	ns ma	y or ma	ay not be	present ir	ı this r	eport.
				-								

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 Contains No Free Liquid **CNF**

Duplicate Error Ratio (normalized absolute difference) DER

Dil Fac Dilution Factor

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) Limit of Quantitation (DoD/DOE) LOQ

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

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

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

NEG Negative / Absent POS Positive / Present **Practical Quantitation Limit PQL**

PRES Presumptive **Quality Control** QC

Relative Error Ratio (Radiochemistry) **RER**

Reporting Limit or Requested Limit (Radiochemistry) RL

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: 890-3358-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Job ID: 890-3358-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3358-1

Receipt

The sample was received on 11/1/2022 3:05 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 1.6°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS06 (890-3358-1).

GC VOA

Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-21092-A-6-D MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: (890-3350-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-38586 and analytical batch 880-38574 was outside control limits. Sample non-homogeneity is suspected.

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.

Matrix: Solid

Client Sample Results

Client: Ensolum Job ID: 890-3358-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Client Sample ID: SS06 Lab Sample ID: 890-3358-1

Date Collected: 11/01/22 11:00
Date Received: 11/01/22 15:05

Sample Depth: 0.2'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:19	
Toluene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:19	
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:19	
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		11/07/22 08:38	11/09/22 03:19	
o-Xylene	< 0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:19	
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/07/22 08:38	11/09/22 03:19	•
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	104		70 - 130			11/07/22 08:38	11/09/22 03:19	
1,4-Difluorobenzene (Surr)	89		70 - 130			11/07/22 08:38	11/09/22 03:19	
Method: TAL SOP Total BTEX -	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/09/22 11:30	-
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Analyte Total TPH	Result		50.0	mg/Kg	D	Prepared	11/04/22 11:08	Dil Fac
				99				
Method: SW846 8015B NM - Die	sel Range Orga	nice (DBO)						
	ooi italigo oigo	illics (DKO)	(GC)					
Analyte	•	Qualifier	(GC) RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	•	Qualifier	• •	Unit mg/Kg	D	Prepared 11/03/22 08:35	Analyzed 11/04/22 05:13	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	Result <50.0	Qualifier U	RL 50.0	mg/Kg	<u>D</u>	11/03/22 08:35	11/04/22 05:13	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result	Qualifier U	RL		<u>D</u>			
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <50.0	Qualifier U	RL 50.0	mg/Kg	<u>D</u>	11/03/22 08:35	11/04/22 05:13	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <50.0	Qualifier U U U	RL 50.0	mg/Kg	<u> </u>	11/03/22 08:35	11/04/22 05:13 11/04/22 05:13	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result <50.0 <50.0 <50.0	Qualifier U U U	RL 50.0 50.0 50.0	mg/Kg	<u>D</u>	11/03/22 08:35 11/03/22 08:35 11/03/22 08:35	11/04/22 05:13 11/04/22 05:13 11/04/22 05:13	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	Result	Qualifier U U U	50.0 50.0 50.0 Limits	mg/Kg	<u> </u>	11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared	11/04/22 05:13 11/04/22 05:13 11/04/22 05:13 Analyzed	Dil Fa
Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl	Result	Qualifier U U Qualifier	RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg	<u> </u>	11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared 11/03/22 08:35	11/04/22 05:13 11/04/22 05:13 11/04/22 05:13 Analyzed 11/04/22 05:13	Dil Fa
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result	Qualifier U U Qualifier	RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg	<u>D</u>	11/03/22 08:35 11/03/22 08:35 11/03/22 08:35 Prepared 11/03/22 08:35	11/04/22 05:13 11/04/22 05:13 11/04/22 05:13 Analyzed 11/04/22 05:13	Dil Fa

DFBZ = 1,4-Difluorobenzene (Surr)

OTPH = o-Terphenyl

Surrogate Summary

Client: Ensolum Job ID: 890-3358-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

_			
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-21092-A-6-C MS	Matrix Spike	113	96
880-21092-A-6-D MSD	Matrix Spike Duplicate	103	106
890-3358-1	SS06	104	89
LCS 880-38813/1-A	Lab Control Sample	105	90
LCSD 880-38813/2-A	Lab Control Sample Dup	106	107
MB 880-38813/5-A	Method Blank	89	88
MB 880-38884/5-A	Method Blank	88	92
Surrogate Legend			
BFB = 4-Bromofluoroben:	zene (Surr)		

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

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

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3350-A-1-E MS	Matrix Spike	67 S1-	61 S1-	
890-3350-A-1-F MSD	Matrix Spike Duplicate	85	74	
890-3358-1	SS06	89	83	
LCS 880-38586/2-A	Lab Control Sample	99	89	
LCSD 880-38586/3-A	Lab Control Sample Dup	105	105	
MB 880-38586/1-A	Method Blank	83	80	
Surrogate Legend				

Client: Ensolum Job ID: 890-3358-1 SDG: 03D2024104 Project/Site: Redhead 31 FedCom 1H

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38813/5-A

Matrix: Solid

Analysis Batch: 38953

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 38813

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/07/22 08:38	11/08/22 22:11	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	11	1/07/22 08:38	11/08/22 22:11	1
1,4-Difluorobenzene (Surr)	88		70 - 130	11	1/07/22 08:38	11/08/22 22:11	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 38813

Prep Type: Total/NA

Prep Batch: 38813

Matrix: Solid Analysis Batch: 38953

Lab Sample ID: LCS 880-38813/1-A

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1086	-	mg/Kg		109	70 - 130	
Toluene	0.100	0.09645		mg/Kg		96	70 - 130	
Ethylbenzene	0.100	0.09317		mg/Kg		93	70 - 130	
m-Xylene & p-Xylene	0.200	0.1923		mg/Kg		96	70 - 130	
o-Xylene	0.100	0.09506		mg/Kg		95	70 - 130	

LCS LCS

Surrogate	%Recovery Quality	fier Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	90	70 - 130

Lab Sample ID: LCSD 880-38813/2-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Solid

Analysis Batch: 38953

, , =									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1093		mg/Kg		109	70 - 130	1	35
Toluene	0.100	0.09461		mg/Kg		95	70 - 130	2	35
Ethylbenzene	0.100	0.09193		mg/Kg		92	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.1905		mg/Kg		95	70 - 130	1	35
o-Xylene	0.100	0.09425		mg/Kg		94	70 - 130	1	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1.4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 880-21092-A-6-C MS

Matrix: Solid

Analysis Batch: 38953

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

Prep Batch: 38813

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U F1 F2	0.101	0.1037		mg/Kg		103	70 - 130	
Toluene	<0.00201	U F1 F2	0.101	0.09297		mg/Kg		92	70 - 130	

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Released to Imaging: 2/21/2023 12:16:35 PM

QC Sample Results

Job ID: 890-3358-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: 880-21092-A-6-C MS

Matrix: Solid

Analysis Batch: 38953

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

Prep Batch: 38813

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits D Ethylbenzene <0.00201 U F1 F2 0.101 0.09137 mg/Kg 91 70 - 130 m-Xylene & p-Xylene <0.00402 U F1 F2 0.202 0.1883 mg/Kg 93 70 - 130 <0.00201 U F1 F2 0.101 0.09231 91 70 - 130 o-Xylene mg/Kg

MS MS

Surrogate Qualifier Limits %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 113 1,4-Difluorobenzene (Surr) 70 - 130 96

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 38813

Lab Sample ID: 880-21092-A-6-D MSD **Matrix: Solid**

Analysis Batch: 38953

Sample Sample Spike MSD MSD RPD Result Qualifier %Rec RPD Limit Analyte Added Result Qualifier Limits Unit D Benzene <0.00201 U F1 F2 0.0994 0.02368 F1 F2 mg/Kg 24 70 - 130 126 35 Toluene <0.00201 UF1F2 0.0994 0.02194 F1 F2 mg/Kg 21 70 - 130 124 35 Ethylbenzene U F1 F2 0.0994 0.02200 F1 F2 22 70 - 130 122 35 < 0.00201 mg/Kg m-Xylene & p-Xylene < 0.00402 U F1 F2 0.199 0.02035 F1 F2 mg/Kg 10 70 - 130 161 35 <0.00201 U F1 F2 0.0994 0.02229 F1 F2 22 70 - 130 122 o-Xylene mg/Kg

MSD MSD

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

Lab Sample ID: MB 880-38884/5-A **Matrix: Solid**

Analysis Batch: 38953

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 38884

Result Qualifier Prepared Analyzed Dil Fac Analyte RL Unit D Benzene <0.00200 U 0.00200 mg/Kg 11/07/22 13:51 11/08/22 10:48 Toluene <0.00200 U 0.00200 11/07/22 13:51 11/08/22 10:48 mg/Kg Ethylbenzene <0.00200 U 0.00200 mg/Kg 11/07/22 13:51 11/08/22 10:48 m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 11/07/22 13:51 11/08/22 10:48 0.00200 11/07/22 13:51 11/08/22 10:48 o-Xylene <0.00200 U mg/Kg 11/08/22 10:48 Xylenes, Total <0.00400 U 0.00400 mg/Kg 11/07/22 13:51

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	11/07/22 13:51	11/08/22 10:48	1
1,4-Difluorobenzene (Surr)	92		70 - 130	11/07/22 13:51	11/08/22 10:48	1

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

Lab Sample ID: MB 880-38586/1-A

Analysis Batch: 38574

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

Prep Batch: 38586

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac <50.0 Ū 50.0 11/03/22 08:35 11/03/22 22:42 Gasoline Range Organics mg/Kg

(GRO)-C6-C10

Matrix: Solid

Client: Ensolum Job ID: 890-3358-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: MB 880-38586/1-A

Lab Sample ID: LCS 880-38586/2-A

Matrix: Solid

Analysis Batch: 38574

Client	Sample	ID:	Method	Blank

Prep Type: Total/NA

Prep Batch: 38586

	IVID	S MID								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1		
C10-C28)										
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1		

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130	11/03/22 08:35	11/03/22 22:42	1
o-Terphenyl	80		70 - 130	11/03/22 08:35	11/03/22 22:42	1

Client Sample ID: Lab Control Sample

70 - 130

Prep Type: Total/NA

Prep Batch: 38586

Analysis Batch: 38574 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 887.3 89 70 - 130 mg/Kg (GRO)-C6-C10

1144

mg/Kg

1000

Diesel Range Organics (Over C10-C28)

Matrix: Solid

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: LCSD 880-38586/3-A

Matrix: Solid

Analysis Batch: 38574

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38586

114

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	1084		mg/Kg		108	70 - 130	20	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	1300		mg/Kg		130	70 - 130	13	20	
C10-C28)										

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

Lab Sample ID: 890-3350-A-1-E MS

Matrix: Solid

C10-C28)

Analysis Batch: 38574

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 38586

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 59.2 997 819.8 76 70 - 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 <50.0 U F2 997 747.7 Diesel Range Organics (Over mg/Kg 75 70 - 130

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	67	S1-	70 - 130
o-Terphenyl	61	S1-	70 - 130

Job ID: 890-3358-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

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

Lab Sample ID: 890-3350-A-1-F MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 38574 Prep Batch: 38586 Sample Sample MSD MSD RPD Spike Analyte Result Qualifier Added Result Qualifier %Rec Limits RPD Limit Unit D Gasoline Range Organics 59.2 999 958.5 mg/Kg 90 70 - 130 16 20 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U F2 999 926.8 F2 70 - 130 mg/Kg 93 21 C10-C28)

MSD MSD %Recovery Qualifier Limits Surrogate 1-Chlorooctane 70 - 130 85 o-Terphenyl 74 70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38610/1-A Client Sample ID: Method Blank **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

MB MB

Result Qualifier Unit Analyte RL Prepared Analyzed Dil Fac Chloride <5.00 5.00 mg/Kg 11/04/22 20:57

Lab Sample ID: LCS 880-38610/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 260.1 90 - 110 mg/Kg 104

Lab Sample ID: LCSD 880-38610/3-A

Matrix: Solid

Analysis Batch: 38766

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	253.5		mg/Kg	_	101	90 - 110	3	20

Lab Sample ID: 890-3361-A-6-C MS

Matrix: Solid

Analysis Batch: 38766

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	46.6		249	295.1		ma/Ka		100	90 - 110	

Lab Sample ID: 890-3361-A-6-D MSD

Matrix: Solid

Analysis Batch: 38766

Analysis Datch. 30700											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	46.6		249	288.6		mg/Kg		97	90 - 110	2	20

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Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Prep Type: Soluble

Prep Type: Soluble

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

QC Association Summary

Client: Ensolum Job ID: 890-3358-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

GC VOA

Prep Batch: 38813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Total/NA	Solid	5035	
MB 880-38813/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38813/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38813/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21092-A-6-C MS	Matrix Spike	Total/NA	Solid	5035	
880-21092-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38884/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Total/NA	Solid	8021B	38813
MB 880-38813/5-A	Method Blank	Total/NA	Solid	8021B	38813
MB 880-38884/5-A	Method Blank	Total/NA	Solid	8021B	38884
LCS 880-38813/1-A	Lab Control Sample	Total/NA	Solid	8021B	38813
LCSD 880-38813/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38813
880-21092-A-6-C MS	Matrix Spike	Total/NA	Solid	8021B	38813
880-21092-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38813

Analysis Batch: 39091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Total/NA	Solid	8015B NM	38586
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015B NM	38586
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38586
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38586
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	38586
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38586

Prep Batch: 38586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Total/NA	Solid	8015NM Prep	
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum Job ID: 890-3358-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

HPLC/IC

Leach Batch: 38610

Lab Sample ID 890-3358-1	Client Sample ID SS06	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-38610/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38610/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38610/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3361-A-6-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3361-A-6-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 38766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3358-1	SS06	Soluble	Solid	300.0	38610
MB 880-38610/1-A	Method Blank	Soluble	Solid	300.0	38610
LCS 880-38610/2-A	Lab Control Sample	Soluble	Solid	300.0	38610
LCSD 880-38610/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38610
890-3361-A-6-C MS	Matrix Spike	Soluble	Solid	300.0	38610
890-3361-A-6-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38610

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Lab Chronicle

Client: Ensolum Job ID: 890-3358-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Client Sample ID: SS06

Lab Sample ID: 890-3358-1

Matrix: Solid

Date Collected: 11/01/22 11:00 Date Received: 11/01/22 15:05

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	38813	11/07/22 08:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38953	11/09/22 03:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39091	11/09/22 11:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38728	11/04/22 11:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38586	11/03/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38574	11/04/22 05:13	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	38610	11/03/22 10:30	СН	EET MID
Soluble	Analysis	300.0		1			38766	11/04/22 21:36	CH	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: 890-3358-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

Laboratory: Eurofins Midland

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

Authority Texas		ogram	Identification Number	Expiration Date 06-30-23	
		ELAP	T104704400-22-24		
The following analytes the agency does not of	. ,	ut 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: Redhead 31 FedCom 1H

Job ID: 890-3358-1 SDG: 03D2024104

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

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Sample Summary

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3358-1

SDG: 03D2024104

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3358-1	SS06	Solid	11/01/22 11:00	11/01/22 15:05	0.2'

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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, but not analyzed. These terms will be enforced unless previously nego Relinquished by: (Signature) Received by: (Signature)	Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8R	Thermometer ID: Corrected Temperature: Corrected Temperature: Sampled Sampled Sampled Signal Starts the dath of received the lab, if re	Name: Nacholard Fallonath Trum A	Address: 377. No.+1 buts Huy A City, State ZIP: (Artsbook, Nim 88776 0 o Phone: 4.02-5, 7-442) Email: 1	Om Adoms	Environment Testing Xenco
r from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard its sibility for any losses or expenses incurred by the client if such losses are due to circumstances to reach sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unit Date/Time Relinquished by: (Signa 4)	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe	day received by Wes No To parameters Parameters Bepth Grab/ * of Comp Cont Comp Cont Sept. 3358	sh Code	Jones Him. nm / Kieminos	Bill to: (if different) (A , O Company Name:	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
ndard terms and conditions nstances beyond the control broced unless previously negotilated. (Signature) Received by: (Signature)	Ig Mn Mo Ni K Se Ag SiO ₂ Na Sr Tl Sn U Se Ag Tl U Hg: 1631 / 245.1 / 7470 /	Chain of Custody	UEST	roject:):	Work Order Comments Program: UST/PST	Work Order No:
Date∕Time) V Zn	Cool: Cool MeOH: Me HCL: HC HNO 3: HN H2SO 4: H2 NaOH: Na H3PO 4: NABIS NaHSO 4: NASO 3 Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC Sample Comments	Preservative Codes Preservative Codes Preservative Codes	TRRP [RRC Superfund	of

Login Sample Receipt Checklist

 Client: Ensolum
 Job Number: 890-3358-1

 SDG Number: 03D2024104

Login Number: 3358 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: 890-3358-1 SDG Number: 03D2024104

Login Number: 3358
List Source: Eurofins Midland
List Number: 2
List Creation: 11/03/22 10:17 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

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

Laboratory Job ID: 890-3359-1

Laboratory Sample Delivery Group: 03D2024104 Client Project/Site: Redhead 31 FedCom 1H

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Josh Adams

RAMER

Authorized for release by: 11/9/2022 11:48:19 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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

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

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.

Client: Ensolum

Laboratory Job ID: 890-3359-1

Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

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Definitions/Glossary

Job ID: 890-3359-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

Qualifiers

GC VOA Qualifier

Qualifier Description F1 MS and/or MSD recovery exceeds control limits.

F2 MS/MSD RPD exceeds control limits

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description**

F2 MS/MSD RPD exceeds control limits

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

HPLC/IC

Qualifier **Qualifier Description**

U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These	commo	nly use	ed at	brevi	atior	ns m	ay or r	nay not be	present ir	n this r	eport.
				-					14.1			

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 Contains No Free Liquid **CNF**

Duplicate Error Ratio (normalized absolute difference) DER

Dil Fac **Dilution Factor**

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) Limit of Quantitation (DoD/DOE) LOQ

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 MOI 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

Practical Quantitation Limit PQL

PRES Presumptive **Quality Control** QC

Relative Error Ratio (Radiochemistry) **RER**

Reporting Limit or Requested Limit (Radiochemistry) RL

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

Job ID: 890-3359-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Job ID: 890-3359-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3359-1

Receipt

The sample was received on 11/1/2022 3:05 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 1.6°C

Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: SS07 (890-3359-1).

GC VOA

Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-21092-A-6-D MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: (890-3350-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-38586 and analytical batch 880-38574 was outside control limits. Sample non-homogeneity is suspected.

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.

Matrix: Solid

Lab Sample ID: 890-3359-1

Client Sample Results

Client: Ensolum Job ID: 890-3359-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Client Sample ID: SS07

Date Collected: 11/01/22 11:05 Date Received: 11/01/22 15:05

Sample Depth: 0.2'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:40	
Toluene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:40	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:40	,
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		11/07/22 08:38	11/09/22 03:40	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/07/22 08:38	11/09/22 03:40	
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/07/22 08:38	11/09/22 03:40	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	109		70 - 130			11/07/22 08:38	11/09/22 03:40	
1,4-Difluorobenzene (Surr)	89		70 - 130			11/07/22 08:38	11/09/22 03:40	1
Method: TAL SOP Total BTEX - T	otal BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/09/22 11:30	1
Method: SW846 8015 NM - Diese	l Range Organ	ics (DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/04/22 11:08	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		11/03/22 08:35	11/04/22 05:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/03/22 08:35	11/04/22 05:35	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/03/22 08:35	11/04/22 05:35	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	84		70 - 130			11/03/22 08:35	11/04/22 05:35	
o-Terphenyl	80		70 - 130			11/03/22 08:35	11/04/22 05:35	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	64.1		4.99	mg/Kg	_		11/04/22 21:41	1

Surrogate Summary

Client: Ensolum Job ID: 890-3359-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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)	
880-21092-A-6-C MS	Matrix Spike	113	96	
880-21092-A-6-D MSD	Matrix Spike Duplicate	103	106	
890-3359-1	SS07	109	89	
LCS 880-38813/1-A	Lab Control Sample	105	90	
LCSD 880-38813/2-A	Lab Control Sample Dup	106	107	
MB 880-38813/5-A	Method Blank	89	88	
MB 880-38884/5-A	Method Blank	88	92	
Surrogate Legend	метюй ріапк	00	92	

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

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-3350-A-1-E MS	Matrix Spike	67 S1-	61 S1-	
390-3350-A-1-F MSD	Matrix Spike Duplicate	85	74	
390-3359-1	SS07	84	80	
_CS 880-38586/2-A	Lab Control Sample	99	89	
_CSD 880-38586/3-A	Lab Control Sample Dup	105	105	
MB 880-38586/1-A	Method Blank	83	80	

OTPH = o-Terphenyl

1CO = 1-Chlorooctane

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Client: Ensolum Job ID: 890-3359-1 Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38813/5-A

Matrix: Solid

Analysis Batch: 38953

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 38813

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/07/22 08:38	11/08/22 22:11	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/07/22 08:38	11/08/22 22:11	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	1	1/07/22 08:38	11/08/22 22:11	1
1.4-Difluorobenzene (Surr)	88		70 - 130	1	1/07/22 08:38	11/08/22 22:11	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 880-38813/1-A

Matrix: Solid

Analysis Batch: 38953

Prep Type: Total/NA

Prep Batch: 38813

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1086		mg/Kg		109	70 - 130	
Toluene	0.100	0.09645		mg/Kg		96	70 - 130	
Ethylbenzene	0.100	0.09317		mg/Kg		93	70 - 130	
m-Xylene & p-Xylene	0.200	0.1923		mg/Kg		96	70 - 130	
o-Xylene	0.100	0.09506		mg/Kg		95	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	90	70 - 130

Lab Sample ID: LCSD 880-38813/2-A

Matrix: Solid

Analysis Batch: 38953

Prep Type: Total/NA

Prep Batch: 38813

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.1093		mg/Kg		109	70 - 130	1	35	
Toluene	0.100	0.09461		mg/Kg		95	70 - 130	2	35	
Ethylbenzene	0.100	0.09193		mg/Kg		92	70 - 130	1	35	
m-Xylene & p-Xylene	0.200	0.1905		mg/Kg		95	70 - 130	1	35	
o-Xylene	0.100	0.09425		mg/Kg		94	70 - 130	1	35	

LCSD LCSD

Surrogate	%Recovery Quali	ifier Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1.4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: 880-21092-A-6-C MS

Matrix: Solid

Analysis Batch: 38953

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 38813

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U F1 F2	0.101	0.1037		mg/Kg		103	70 - 130	
Toluene	< 0.00201	U F1 F2	0.101	0.09297		mg/Kg		92	70 - 130	

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11/9/2022

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Type: Total/NA

QC Sample Results

Client: Ensolum Job ID: 890-3359-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: 880-21092-A-6-C MS

Matrix: Solid

Analysis Batch: 38953									Prep	Batch: 38813
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00201	U F1 F2	0.101	0.09137		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.202	0.1883		mg/Kg		93	70 - 130	
o-Xylene	<0.00201	U F1 F2	0.101	0.09231		mg/Kg		91	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 880-21092-A-6-D MSD

Analysis Batch: 38953

Matrix: Solid

Analysis Batch: 38953									Prep	Batch:	38813
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U F1 F2	0.0994	0.02368	F1 F2	mg/Kg		24	70 - 130	126	35
Toluene	<0.00201	U F1 F2	0.0994	0.02194	F1 F2	mg/Kg		21	70 - 130	124	35
Ethylbenzene	<0.00201	U F1 F2	0.0994	0.02200	F1 F2	mg/Kg		22	70 - 130	122	35
m-Xylene & p-Xylene	<0.00402	U F1 F2	0.199	0.02035	F1 F2	mg/Kg		10	70 - 130	161	35
o-Xylene	<0.00201	U F1 F2	0.0994	0.02229	F1 F2	mg/Kg		22	70 - 130	122	35

MSD MSD

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

Lab Sample ID: MB 880-38884/5-A

Matrix: Solid

Analysis Batch: 38953

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 38884 MB MB

Client Sample ID: Matrix Spike Duplicate

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/07/22 13:51	11/08/22 10:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/07/22 13:51	11/08/22 10:48	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	11/07/22 13:51	11/08/22 10:48	1
1,4-Difluorobenzene (Surr)	92		70 - 130	11/07/22 13:51	11/08/22 10:48	1

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

Lab Sample ID: MB 880-38586/1-A

Matrix: Solid

Analysis Batch: 38574

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

Prep Batch: 38586

мв мв Result Qualifier Unit Prepared <50.0 U 50.0 mg/Kg 11/03/22 08:35 11/03/22 22:42 Gasoline Range Organics

(GRO)-C6-C10

o-Terphenyl

Client: Ensolum Job ID: 890-3359-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: MB 880-38586/1-A	Client Sample ID: Method Blank
Matrix: Solid	Prep Type: Total/NA
Analysis Batch: 38574	Prep Batch: 38586

	MR	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/03/22 08:35	11/03/22 22:42	1
	МВ	МВ						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130			11/03/22 08:35	11/03/22 22:42	1
o-Terphenyl	80		70 - 130			11/03/22 08:35	11/03/22 22:42	1

Lab Sample ID: LCS 880-38 Matrix: Solid	586/2-A						Client	Sample	ID: Lab Cont Prep Typ	trol Sample: Total/N
Analysis Batch: 38574									Prep B	atch: 3858
-			Spike	LCS	LCS				%Rec	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics			1000	887.3		mg/Kg		89	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over			1000	1144		mg/Kg		114	70 - 130	
C10-C28)										
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	99		70 - 130							

Lab Sample ID: LCSD 880-38586/3-A	b Sample ID: LCSD 880-38586/3-A Client							t Sample ID: Lab Control Sample Dup				
Matrix: Solid	Matrix: Solid							Type: To	tal/NA			
Analysis Batch: 38574							Prep	Batch:	38586			
	Spike	LCSD	LCSD				%Rec		RPD			
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Gasoline Range Organics	1000	1084		mg/Kg		108	70 - 130	20	20			
(GRO)-C6-C10												
Diesel Range Organics (Over	1000	1300		mg/Kg		130	70 - 130	13	20			
C10-C28)												

70 - 130

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

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Lab Sample ID: 890-3350-A-1-E MS Matrix: Solid Analysis Batch: 38574								Client	Prep 1	: Matrix Spike Type: Total/NA Batch: 38586
Analysis Buton. 00074	Sample	Sample	Spike	MS	MS				%Rec	Butch. 50000
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	59.2		997	819.8		mg/Kg		76	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U F2	997	747.7		mg/Kg		75	70 - 130	
	MS	MS								
Surrogate %I	Recovery	Qualifier	Limits							
1-Chlorooctane	67	S1-	70 - 130							
o-Terphenyl	61	S1-	70 - 130							

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Client: Ensolum Job ID: 890-3359-1 Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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

Lab Sample ID: 890-3350-A-1-F MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Analysis Batch: 38574

Prep Type: Total/NA Prep Batch: 38586

Sample Sample Spike MSD MSD RPD Result Qualifier RPD Limit Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 59.2 999 958.5 mg/Kg 90 70 - 130 16 20 (GRO)-C6-C10 999 926.8 F2 Diesel Range Organics (Over <50.0 U F2 mg/Kg 93 70 - 130 21

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	74		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38610/1-A Client Sample ID: Method Blank **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

мв мв

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			11/04/22 20:57	1

Lab Sample ID: LCS 880-38610/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	260.1		mg/Kg		104	90 - 110	

Lab Sample ID: LCSD 880-38610/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	253.5		mg/Kg		101	90 - 110	3	20	

Lab Sample ID: 890-3361-A-6-C MS Client Sample ID: Matrix Spike **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 38766

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	46.6		249	295 1		ma/Ka		100	90 110	

Lab Sample ID: 890-3361-A-6-D MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Analysis Batch: 38766

-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	46.6		249	288.6		mg/Kg		97	90 - 110	2	20

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Prep Type: Soluble

Client: Ensolum

Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3359-1 SDG: 03D2024104

GC VOA

Prep Batch: 38813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Total/NA	Solid	5035	
MB 880-38813/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38813/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38813/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21092-A-6-C MS	Matrix Spike	Total/NA	Solid	5035	
880-21092-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38884/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Total/NA	Solid	8021B	38813
MB 880-38813/5-A	Method Blank	Total/NA	Solid	8021B	38813
MB 880-38884/5-A	Method Blank	Total/NA	Solid	8021B	38884
LCS 880-38813/1-A	Lab Control Sample	Total/NA	Solid	8021B	38813
LCSD 880-38813/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38813
880-21092-A-6-C MS	Matrix Spike	Total/NA	Solid	8021B	38813
880-21092-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38813

Analysis Batch: 39092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Total/NA	Solid	8015B NM	38586
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015B NM	38586
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38586
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38586
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	38586
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38586

Prep Batch: 38586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-38586/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38586/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38586/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3350-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3350-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Total/NA	Solid	8015 NM	

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Client: Ensolum
Project/Site: Redhead 31 FedCom 1H

Job ID: 890-3359-1 SDG: 03D2024104

HPLC/IC

Leach Batch: 38610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Soluble	Solid	DI Leach	
MB 880-38610/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38610/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38610/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3361-A-6-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3361-A-6-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 38766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3359-1	SS07	Soluble	Solid	300.0	38610
MB 880-38610/1-A	Method Blank	Soluble	Solid	300.0	38610
LCS 880-38610/2-A	Lab Control Sample	Soluble	Solid	300.0	38610
LCSD 880-38610/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38610
890-3361-A-6-C MS	Matrix Spike	Soluble	Solid	300.0	38610
890-3361-A-6-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38610

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Lab Chronicle

Client: Ensolum Job ID: 890-3359-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

Client Sample ID: SS07

Lab Sample ID: 890-3359-1

Matrix: Solid

Date Collected: 11/01/22 11:05 Date Received: 11/01/22 15:05

	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	38813	11/07/22 08:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38953	11/09/22 03:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39092	11/09/22 11:30	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38729	11/04/22 11:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38586	11/03/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38574	11/04/22 05:35	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38610	11/03/22 10:30	СН	EET MID
Soluble	Analysis	300.0		1			38766	11/04/22 21:41	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: 890-3359-1
Project/Site: Redhead 31 FedCom 1H SDG: 03D2024104

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		ELAP	T104704400-22-24	06-30-23					
Texas NELAP T104704400-22-24 06-30-23 The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes the agency does not offer certification.									
,	• •	it the laboratory is not certifi	ed by the governing authority. This list his	ay include arialytes for					
0 ,	• •	Matrix	Analyte	ay include analytes for					
the agency does not of	fer certification.	•	, , ,	ay include analytes for					

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Method Summary

Job ID: 890-3359-1 Client: Ensolum Project/Site: Redhead 31 FedCom 1H

SDG: 03D2024104

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: Redhead 31 FedCom 1H

Job ID: 890-3359-1

SDG: 03D2024104

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3359-1	SS07	Solid	11/01/22 11:05	11/01/22 15:05	0.2'

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Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date: 08/25/2020 Rev. 2020.2

eurofins Xenco **Environment Testing**

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 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 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

tutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions that the control section of the control to	Total 200.7/6010 200.8/6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Tl Sn U V Z ircle Method(s) and Metal(s) to be analyzed TCLP/SPLP6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: $1631/245.1/7470/7471$				S11-1-27 1105 .7: 6 1 V V V	Sample Identification Matrix Date Time Sampled Depth Comp Cont Sampled Sampled	Corrected Temperature:	Yes No WA Temperature Reading: 890-3359 Chain of Crists	Yes No N/A Correction Factor: ID. V P. X	tact: (es) No Thermometer ID: Town DOT and	PLE RECEIPT Temp Blank: Key No Wet Ice: Yes No et	the lab, if received by 4:30pm	TAT starts the day received by	27, 21079, 103, 722-5 Due Date:	ver: BNO94 (CX) WRoutine Rush Pres. Code	ject Name: 100 d M (a) SHED (COM FH) / Turn Around ANALYSIS REQUEST P	one: 303-S17-8437 Email: Deliverables: EDD ADaPT	e ZIP: Our Soun NM 9827 City, State ZIP:	dress: State of Project:	mpany Name: Program: UST/PST PRP Brownfields	ectivaliage:
	O ₂ Na Sr Tl Sn U V Zn 31/245.1/7470/7471					Sample Comments	NaOH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	Na ₂ S ₂ O ₃ : NaSO ₃	NaHSO 4: NABIS	H ₃ PO ₄ : HP	H ₂ SO ₄ : H ₂ NaOH: Na	HCL: HC HNO 3: HN	Cool: Cool MeOH: Me	None: NO DI Water: H ₂ O	Preservative Codes	ADaPT ☐ Other:	Reporting: Level II Level III PST/UST TRRP Level IV		PRP☐ Brownfields ☐ RRC ☐ Superfund ☐	TOTAL COMMISSION

SAMPLE RECEIPT

Sample Custody Seals: Cooler Custody Seals: Samples Received Intact: Project Location: Project Number: Project Name:

Sampler's Name:

City, State ZIP:

Address:

Company Name: roject Manager:

Work Order No:

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-3359-1 SDG Number: 03D2024104

Login Number: 3359 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: 890-3359-1 SDG Number: 03D2024104

Login Number: 3359 **List Source: Eurofins Midland** List Number: 2

List Creation: 11/03/22 10:17 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	

Released to Imaging: 2/21/2023 12:16:35 PM

<6mm (1/4").

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701

Generated 12/21/2022 2:18:13 PM

JOB DESCRIPTION

Redhead Fed Com 1H SDG NUMBER 03D2024104

JOB NUMBER

890-3580-1

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 12/21/2022 2:18:13 PM

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

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Laboratory Job ID: 890-3580-1

SDG: 03D2024104

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Definitions/Glossary

Job ID: 890-3580-1 Client: Ensolum Project/Site: Redhead Fed Com 1H

SDG: 03D2024104

Qualifiers

GC VOA Qualifier

F1 MS and/or MSD recovery exceeds control limits.

Qualifier Description

Н Sample was prepped or analyzed beyond the specified holding time

S1-Surrogate recovery exceeds control limits, low biased.

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description**

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

HPLC/IC

Qualifier **Qualifier Description**

U Indicates the analyte was analyzed for but not detected.

Glossary

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

¤ Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CFL Contains Free Liquid CFU Colony Forming Unit Contains No Free Liquid **CNF**

Duplicate Error Ratio (normalized absolute difference) DER

Dil Fac **Dilution Factor**

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) Limit of Quantitation (DoD/DOE) LOQ

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

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

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

NEG Negative / Absent POS Positive / Present

Practical Quantitation Limit PQL

PRES Presumptive **Quality Control** QC

Relative Error Ratio (Radiochemistry) **RER**

Reporting Limit or Requested Limit (Radiochemistry) RL

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: Redhead Fed Com 1H

Job ID: 890-3580-1

SDG: 03D2024104

Job ID: 890-3580-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3580-1

Receipt

The samples were received on 12/5/2022 4:38 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 4.0°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: FS01 (890-3580-1), SW01 (890-3580-2), SW02 (890-3580-3), SW03 (890-3580-4) and SW04 (890-3580-5).

The following sample was listed on the Chain of Custody (COC); however, no sample was received: SW02 (890-3580-3).

GC VOA

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-41898 and analytical batch 880-41994 was outside the control limits.

Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-41898 and analytical batch 880-41994 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SW03 (890-3580-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-42103 and analytical batch 880-42128 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: The following sample(s) was analyzed outside of analytical holding time due to instrument malfunction.SW03 (890-3580-4).

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

GC Semi VOA

Method 8015MOD NM: The surrogate recovery for the blank associated with preparation batch 880-41325 and analytical batch 880-41523 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SW01 (890-3580-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC

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

Matrix: Solid

Lab Sample ID: 890-3580-1

Job ID: 890-3580-1

Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: FS01 Date Collected: 12/05/22 00:00

Date Received: 12/05/22 16:38

Sample Depth: 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 17:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 17:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 17:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/15/22 10:12	12/16/22 17:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 17:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/15/22 10:12	12/16/22 17:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130			12/15/22 10:12	12/16/22 17:36	1
1,4-Difluorobenzene (Surr)	116		70 - 130			12/15/22 10:12	12/16/22 17:36	1
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			12/19/22 16:02	1
Method: SW846 8015 NM - Diese	al Range Organ	ics (DRO) ((GC)					
Analyte		Qualifier	RL	Unit	D	Duamanad		
•				UIIIL	U	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg		Prepared	Analyzed 12/12/22 12:52	
- -			50.0			Prepared		
Total TPH Method: SW846 8015B NM - Dies Analyte	sel Range Orga		50.0		<u></u>	Prepared		1
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics	sel Range Orga	nics (DRO) Qualifier	50.0 (GC)	mg/Kg			12/12/22 12:52	1 Dil Fac
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10	sel Range Orga Result	nics (DRO) Qualifier	50.0 (GC)	mg/Kg Unit mg/Kg		Prepared 12/08/22 09:35	12/12/22 12:52 Analyzed 12/12/22 02:58	Dil Fac
Method: SW846 8015B NM - Dies Analyte	sel Range Orga Result <50.0	nics (DRO) Qualifier	(GC) RL 50.0	mg/Kg		Prepared	12/12/22 12:52 Analyzed	Dil Fac
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	sel Range Orga Result <50.0	nics (DRO) Qualifier U	(GC) RL 50.0	mg/Kg Unit mg/Kg		Prepared 12/08/22 09:35	12/12/22 12:52 Analyzed 12/12/22 02:58	Dil Fac
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	sel Range Orga Result <50.0	nics (DRO) Qualifier U U	50.0 (GC) RL 50.0 50.0	mg/Kg Unit mg/Kg mg/Kg		Prepared 12/08/22 09:35 12/08/22 09:35	12/12/22 12:52 Analyzed 12/12/22 02:58 12/12/22 02:58	1 Dil Fac
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	sel Range Orga Result <50.0 <50.0	nics (DRO) Qualifier U U	50.0 (GC) RL 50.0 50.0 50.0	mg/Kg Unit mg/Kg mg/Kg		Prepared 12/08/22 09:35 12/08/22 09:35 12/08/22 09:35	Analyzed 12/12/22 02:58 12/12/22 02:58 12/12/22 02:58	Dil Fac
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	Name	nics (DRO) Qualifier U U	50.0 (GC) RL 50.0 50.0 50.0 Limits	mg/Kg Unit mg/Kg mg/Kg		Prepared 12/08/22 09:35 12/08/22 09:35 12/08/22 09:35 Prepared	Analyzed 12/12/22 02:58 12/12/22 02:58 12/12/22 02:58 Analyzed	Dil Fac
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	Sel Range Orga Result	U Qualifier U Qualifier	50.0 (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg Unit mg/Kg mg/Kg		Prepared 12/08/22 09:35 12/08/22 09:35 12/08/22 09:35 Prepared 12/08/22 09:35	12/12/22 12:52 Analyzed 12/12/22 02:58 12/12/22 02:58 12/12/22 02:58 Analyzed 12/12/22 02:58	Dil Fac 1 1 Dil Fac 1 Dil Fac
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	Sel Range Orga Result <50.0 <50.0 <50.0 %Recovery 119 116 Sel, Ion Chromato	U Qualifier U Qualifier	50.0 (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg Unit mg/Kg mg/Kg		Prepared 12/08/22 09:35 12/08/22 09:35 12/08/22 09:35 Prepared 12/08/22 09:35	12/12/22 12:52 Analyzed 12/12/22 02:58 12/12/22 02:58 12/12/22 02:58 Analyzed 12/12/22 02:58	

Client Sample ID: SW01 Lab Sample ID: 890-3580-2 Matrix: Solid

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

Released to Imaging: 2/21/2023 12:16:35 PM

Sample Depth: 0 - 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		12/15/22 10:12	12/16/22 17:57	1
Toluene	<0.00202	U	0.00202	mg/Kg		12/15/22 10:12	12/16/22 17:57	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		12/15/22 10:12	12/16/22 17:57	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		12/15/22 10:12	12/16/22 17:57	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		12/15/22 10:12	12/16/22 17:57	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		12/15/22 10:12	12/16/22 17:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130			12/15/22 10:12	12/16/22 17:57	1

Job ID: 890-3580-1

Client: Ensolum SDG: 03D2024104 Project/Site: Redhead Fed Com 1H

Client Sample ID: SW01 Lab Sample ID: 890-3580-2

Date Collected: 12/05/22 00:00 Matrix: Solid Date Received: 12/05/22 16:38

Sample Depth: 0 - 4

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

Surrogate	%Recovery Qua	ıalifier Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	115	70 - 130	12/15/22 10:12	12/16/22 17:57	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403 U		0.00403	mg/Kg			12/19/22 16:02	1

Mathada OMO40 0045 NM Disasi Damas Omenica (DDO) (OO	Α.
Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC	. 1

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	ma/Ka			12/12/22 12:52	1

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

		(=::=)	()					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/08/22 09:35	12/12/22 03:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/08/22 09:35	12/12/22 03:20	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/08/22 09:35	12/12/22 03:20	1
Surrogate	%Pecovery	Qualifier	l imite			Propared	Analyzod	Dil Eac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	138	S1+	70 - 130	12/08/22 09:35	12/12/22 03:20	1
o-Terphenyl	135	S1+	70 - 130	12/08/22 09:35	12/12/22 03:20	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qu	ualifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20.2	5.03	mg/Kg			12/11/22 19:50	1

Client Sample ID: SW03 Lab Sample ID: 890-3580-4

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0199	UH	0.0199	mg/Kg		12/17/22 17:17	12/21/22 10:49	10
Toluene	0.0204	H	0.0199	mg/Kg		12/17/22 17:17	12/21/22 10:49	10
Ethylbenzene	<0.0199	UH	0.0199	mg/Kg		12/17/22 17:17	12/21/22 10:49	10
m-Xylene & p-Xylene	<0.0398	UH	0.0398	mg/Kg		12/17/22 17:17	12/21/22 10:49	10
o-Xylene	<0.0199	UH	0.0199	mg/Kg		12/17/22 17:17	12/21/22 10:49	10
Xylenes, Total	<0.0398	UH	0.0398	mg/Kg		12/17/22 17:17	12/21/22 10:49	10
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	54	S1-	70 - 130			12/17/22 17:17	12/21/22 10:49	10

4-Bromofluorobenzene (Surr)	54 S1-	70 - 130	12/17/22 17:17	12/21/22 10:49	10
1,4-Difluorobenzene (Surr)	106	70 - 130	12/17/22 17:17	12/21/22 10:49	10

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0398	U	0.0398	mg/Kg			12/21/22 14:43	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/12/22 12:52	1

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Matrix: Solid

Job ID: 890-3580-1

Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: SW03 Date Collected: 12/05/22 00:00

Date Received: 12/05/22 16:38 Sample Depth: 0 - 4

Lab Sample ID: 890-3580-4

12/11/22 19:56

Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/08/22 09:35	12/12/22 03:41	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/08/22 09:35	12/12/22 03:41	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/08/22 09:35	12/12/22 03:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130			12/08/22 09:35	12/12/22 03:41	1
o-Terphenyl	119		70 - 130			12/08/22 09:35	12/12/22 03:41	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte	Pocult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: SW04 Lab Sample ID: 890-3580-5 Matrix: Solid

5.04

22.1

mg/Kg

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

Sample Depth: 0 - 4

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 18:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 18:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 18:38	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/15/22 10:12	12/16/22 18:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 18:38	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/15/22 10:12	12/16/22 18:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130			12/15/22 10:12	12/16/22 18:38	1
1,4-Difluorobenzene (Surr)	113		70 - 130			12/15/22 10:12	12/16/22 18:38	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			12/19/22 16:02	1
Method: SW846 8015 NM - Diese	I Range Organ	ics (DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/12/22 12:52	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		12/08/22 09:35	12/12/22 04:03	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/08/22 09:35	12/12/22 04:03	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/08/22 09:35	12/12/22 04:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130			12/08/22 09:35	12/12/22 04:03	1

Client Sample Results

Client: Ensolum Job ID: 890-3580-1

Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: SW04 Lab Sample ID: 890-3580-5 Date Collected: 12/05/22 00:00 Matrix: Solid Date Received: 12/05/22 16:38

Sample Depth: 0 - 4

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	80.0		4.99	mg/Kg			12/11/22 20:13	1	

Surrogate Summary

Job ID: 890-3580-1 Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance L
		BFB1	DFBZ1	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-22507-A-1-C MS	Matrix Spike	122	116	
880-22507-A-1-D MSD	Matrix Spike Duplicate	128	115	
390-3580-1	FS01	95	116	
390-3580-2	SW01	94	115	
390-3580-4	SW03	54 S1-	106	
390-3580-5	SW04	94	113	
890-3585-A-1-E MS	Matrix Spike	91	100	
890-3585-A-1-F MSD	Matrix Spike Duplicate	108	96	
CS 880-41898/1-A	Lab Control Sample	92	97	
CS 880-42103/1-A	Lab Control Sample	111	117	
CSD 880-41898/2-A	Lab Control Sample Dup	94	100	
CSD 880-42103/2-A	Lab Control Sample Dup	107	112	
MB 880-41898/5-A	Method Blank	62 S1-	106	
MB 880-42103/5-A	Method Blank	81	104	
MB 880-42128/101	Method Blank	86	104	
Surrogate Legend				
BFB = 4-Bromofluorober	zene (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)	
890-3574-A-1-E MS	Matrix Spike	116	96	
890-3574-A-1-F MSD	Matrix Spike Duplicate	100	96	
890-3580-1	FS01	119	116	
890-3580-2	SW01	138 S1+	135 S1+	
890-3580-4	SW03	126	119	
890-3580-5	SW04	118	114	
LCS 880-41325/2-A	Lab Control Sample	115	127	
LCSD 880-41325/3-A	Lab Control Sample Dup	112	125	
MB 880-41325/1-A	Method Blank	119	160 S1+	
Surrogate Legend				

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Released to Imaging: 2/21/2023 12:16:35 PM

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3580-1 SDG: 03D2024104 Project/Site: Redhead Fed Com 1H

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-41898/5-A

Matrix: Solid Analysis Batch: 41994 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41898

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 11:19	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 11:19	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 11:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/15/22 10:12	12/16/22 11:19	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:12	12/16/22 11:19	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/15/22 10:12	12/16/22 11:19	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	62	S1-	70 - 130	12/15/22 10:12	12/16/22 11:19	1
1,4-Difluorobenzene (Surr)	106		70 - 130	12/15/22 10:12	12/16/22 11:19	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Lab Sample ID: LCS 880-41898/1-A **Matrix: Solid** Analysis Batch: 41994 Prep Batch: 41898 LCS LCS Spike

	Opino						/01100	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08131		mg/Kg		81	70 - 130	
Toluene	0.100	0.07940		mg/Kg		79	70 - 130	
Ethylbenzene	0.100	0.07946		mg/Kg		79	70 - 130	
m-Xylene & p-Xylene	0.200	0.1750		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.08570		mg/Kg		86	70 - 130	

LCS LCS

Surrogate	%Recovery Qualific	er Limits
4-Bromofluorobenzene (Surr)	92	70 - 130
1,4-Difluorobenzene (Surr)	97	70 - 130

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Lab Sample ID: LCSD 880-41898/2-A

Analysis Batch: 41994

Prep Type: Total/NA Prep Batch: 41898

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08847		mg/Kg		88	70 - 130	8	35
Toluene	0.100	0.08281		mg/Kg		83	70 - 130	4	35
Ethylbenzene	0.100	0.08020		mg/Kg		80	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.1730		mg/Kg		87	70 - 130	1	35
o-Xylene	0.100	0.08494		mg/Kg		85	70 - 130	1	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	94	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: 890-3585-A-1-E MS

Matrix: Solid

Analysis Batch: 41994

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

Prep Batch: 41898

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U	0.101	0.07767		mg/Kg		76	70 - 130	
Toluene	<0.00201	U F1	0.101	0.07022	F1	mg/Kg		68	70 - 130	

Client Sample ID: Matrix Spike

73

91

90

70 - 130

70 - 130

mg/Kg

mg/Kg

mg/Kg

70 - 130

Client: Ensolum

Job ID: 890-3580-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

<0.00201 U

<0.00402 U

<0.00201 U

96

Lab Sample ID: 890-3585-A-1-E MS

Matrix: Solid									Prep 1	Type: Total/NA
Analysis Batch: 41994									Prep	Batch: 41898
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00201	U F1	0.101	0.07059	F1	mg/Kg		69	70 - 130	
m-Xylene & p-Xylene	<0.00402	U	0.202	0.1525		mg/Kg		75	70 - 130	

0.07419

0.1833

0.09074

0.101

MS MS

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

Lab Sample ID: 890-3585-A-1-F MSD

m-Xylene & p-Xylene

o-Xylene

o-Xylene

Analysis Batch: 41994

Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** Prep Type: Total/NA Prep Batch: 41898

Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits 0.0996 Benzene <0.00201 U 0.07985 mg/Kg 79 70 - 130 3 35 Toluene 0.0996 0.08279 82 <0.00201 UF1 mg/Kg 70 - 130 16 35 Ethylbenzene <0.00201 UF1 0.0996 0.08282 mg/Kg 83 70 - 130 16 35

0.199

0.0996

70 - 130

MSD MSD Surrogate Qualifier Limits %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 108

Lab Sample ID: MB 880-42103/5-A

1,4-Difluorobenzene (Surr)

Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 42128 Prep Batch: 42103 MB MB

Analyte	Result (Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200 U	U	0.00200	mg/Kg		12/17/22 17:17	12/21/22 06:00	1
Toluene	<0.00200 l	U	0.00200	mg/Kg		12/17/22 17:17	12/21/22 06:00	1
Ethylbenzene	<0.00200 l	U	0.00200	mg/Kg		12/17/22 17:17	12/21/22 06:00	1
m-Xylene & p-Xylene	<0.00400 U	U	0.00400	mg/Kg		12/17/22 17:17	12/21/22 06:00	1
o-Xylene	<0.00200 l	U	0.00200	mg/Kg		12/17/22 17:17	12/21/22 06:00	1
Xylenes, Total	<0.00400 l	U	0.00400	mg/Kg		12/17/22 17:17	12/21/22 06:00	1

	MB MB				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81	70 - 130	12/17/22 17:17	12/21/22 06:00	1
1.4-Difluorobenzene (Surr)	104	70 - 130	12/17/22 17:17	12/21/22 06:00	1

Lab Sample ID: LCS 880-42103/1-A

Matrix: Solid

Analysis Batch: 42128

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

Prep Batch: 42103

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08922		mg/Kg		89	70 - 130	
Toluene	0.100	0.08758		mg/Kg		88	70 - 130	
Ethylbenzene	0.100	0.09205		mg/Kg		92	70 - 130	
m-Xylene & p-Xylene	0.200	0.1948		mg/Kg		97	70 - 130	

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35

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QC Sample Results

Client: Ensolum Job ID: 890-3580-1 SDG: 03D2024104 Project/Site: Redhead Fed Com 1H

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

Lab Sample ID: LCS 880-42103/1-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 42128** Prep Batch: 42103

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
o-Xylene	0.100	0.09878		mg/Kg		99	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	117		70 - 130

Lab Sample ID: LCSD 880-42103/2-A **Client Sample ID: Lab Control Sample Dup**

Matrix: Solid Prep Type: Total/NA **Analysis Batch: 42128** Prep Batch: 42103

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08903		mg/Kg		89	70 - 130	0	35
Toluene	0.100	0.09082		mg/Kg		91	70 - 130	4	35
Ethylbenzene	0.100	0.09375		mg/Kg		94	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1988		mg/Kg		99	70 - 130	2	35
o-Xylene	0.100	0.1011		mg/Kg		101	70 - 130	2	35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

Lab Sample ID: 880-22507-A-1-C MS Client Sample ID: Matrix Spike

Matrix: Solid Prep Type: Total/NA Analysis Batch: 42128 Prep Batch: 42103

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U	0.0998	0.09416	-	mg/Kg		94	70 - 130	
Toluene	0.00217	F1	0.0998	0.07971		mg/Kg		78	70 - 130	
Ethylbenzene	0.0148	F1	0.0998	0.07934	F1	mg/Kg		65	70 - 130	
m-Xylene & p-Xylene	0.0454	F1	0.200	0.1607	F1	mg/Kg		58	70 - 130	
o-Xylene	0.0250	F1	0.0998	0.08158	F1	mg/Kg		57	70 - 130	
	MS	MS								
	IVIS	IVIS								

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	122	70 - 130
1,4-Difluorobenzene (Surr)	116	70 - 130

Lab Sample ID: 880-22507-A-1-D MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 42128 Prep Batch: 42103 Sample Sample Spike MSD MSD %Rec

Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
<0.00200	U	0.0996	0.08584		mg/Kg		86	70 - 130	9	35
0.00217	F1	0.0996	0.06563	F1	mg/Kg		64	70 - 130	19	35
0.0148	F1	0.0996	0.07065	F1	mg/Kg		56	70 - 130	12	35
0.0454	F1	0.199	0.1464	F1	mg/Kg		51	70 - 130	9	35
0.0250	F1	0.0996	0.07398	F1	mg/Kg		49	70 - 130	10	35
	<0.00200 0.00217 0.0148 0.0454	Result Qualifier	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200 U	<0.00200 U

Client: Ensolum

Job ID: 890-3580-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

Lab Sample ID: 880-22507-A-1-D MSD

Matrix: Solid

Analysis Batch: 42128

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 42103

MSD MSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 128 70 - 130 1,4-Difluorobenzene (Surr) 115 70 - 130

Lab Sample ID: MB 880-42128/101 Client Sample ID: Method Blank

Matrix: Solid Prep Type: Total/NA

Analysis Batch: 42128

MB MB Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Benzene <0.00200 Ū 0.00200 12/20/22 19:24 mg/Kg Toluene <0.00200 U 0.00200 12/20/22 19:24 mg/Kg <0.00200 U 0.00200 12/20/22 19:24 Ethylbenzene mg/Kg m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 12/20/22 19:24 <0.00200 U 0.00200 12/20/22 19:24 o-Xylene mg/Kg Xylenes, Total <0.00400 U 0.00400 mg/Kg 12/20/22 19:24

MB MB Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed 4-Bromofluorobenzene (Surr) 86 70 - 130 12/20/22 19:24 1,4-Difluorobenzene (Surr) 104 70 - 130 12/20/22 19:24

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

Lab Sample ID: MB 880-41325/1-A Client Sample ID: Method Blank Matrix: Solid Prep Type: Total/NA

Analysis Batch: 41523 Prep Batch: 41325 MB MB

Result Qualifier RLUnit D Prepared Analyzed Dil Fac Analyte Gasoline Range Organics <50.0 U 50.0 mg/Kg 12/08/22 09:35 12/11/22 20:46 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 12/08/22 09:35 12/11/22 20:46 C10-C28) 50.0 12/08/22 09:35 12/11/22 20:46 Oll Range Organics (Over C28-C36) <50.0 U mg/Kg

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 70 - 130 1-Chlorooctane 12/08/22 09:35 12/11/22 20:46 70 - 130 12/08/22 09:35 12/11/22 20:46 o-Terphenyl 160 S1+

Lab Sample ID: LCS 880-41325/2-A Client Sample ID: Lab Control Sample

Matrix: Solid Analysis Batch: 41523

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 1000 967.1 97 70 - 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 913 1 mg/Kg 91 70 - 130

LCS LCS

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 115 o-Terphenyl 127 70 - 130

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C10-C28)

Prep Type: Total/NA

Prep Batch: 41325

Job ID: 890-3580-1

Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

Lab Sample ID: LCSD 880-41325/3-A Client Sample ID: Lab Control Sample Dup

Matrix: Solid Analysis Batch: 41523 Prep Type: Total/NA Prep Batch: 41325

Client Sample ID: Matrix Spike Duplicate

Spike LCSD LCSD RPD Limit Analyte Added Result Qualifier %Rec Limits RPD Unit D 1000 894.5 mg/Kg 89 70 - 130 8 20

Gasoline Range Organics (GRO)-C6-C10 1000 873.9 87 70 - 130 Diesel Range Organics (Over mg/Kg 4 20 C10-C28)

o-Terphenyl

LCSD LCSD Qualifier Limits Surrogate %Recovery 1-Chlorooctane 70 - 130 112

125

Lab Sample ID: 890-3574-A-1-E MS Client Sample ID: Matrix Spike

70 - 130

Matrix: Solid

Analysis Batch: 41523

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 999 Gasoline Range Organics <49.9 U 876.3 mg/Kg 86 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 999 942.4 mg/Kg 92 70 - 130

C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 116 70 - 130 96 70 - 130 o-Terphenyl

Lab Sample ID: 890-3574-A-1-F MSD

Matrix: Solid

Analysis Batch: 41523

Prep Batch: 41325 Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit <49.9 U Gasoline Range Organics 997 828.9 81 70 - 130 20 mg/Kg 6 (GRO)-C6-C10 997 939.8 92 Diesel Range Organics (Over <49.9 L mg/Kg 70 - 130 O 20

C10-C28)

Qualifier Limits Surrogate %Recovery 1-Chlorooctane 100 70 - 130 96 70 - 130 o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41257/1-A

Matrix: Solid

Analysis Batch: 41535

MB MB

MSD MSD

Analyte Result Qualifier RL Unit Dil Fac D Prepared Analyzed Chloride 5.00 12/11/22 18:20 <5.00 U mg/Kg

Prep Type: Soluble

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 41325

QC Sample Results

Client: Ensolum Job ID: 890-3580-1 Project/Site: Redhead Fed Com 1H

SDG: 03D2024104

0

Client Sample ID: SW03

Prep Type: Soluble

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-41257/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble**

Analysis Batch: 41535

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Chloride 250 257.0 mg/Kg 103 90 - 110

Lab Sample ID: LCSD 880-41257/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 41535

Spike LCSD LCSD %Rec RPD Added RPD Limit Analyte Result Qualifier Unit D %Rec Limits

256.5

mg/Kg

103

250

Lab Sample ID: 890-3580-4 MS Client Sample ID: SW03 **Matrix: Solid Prep Type: Soluble**

Chloride

Analysis Batch: 41535

%Rec Sample Sample Spike MS MS Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 22.1 252 286.9 105 90 - 110 mg/Kg

Lab Sample ID: 890-3580-4 MSD

Matrix: Solid

Analysis Batch: 41535

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Qualifier Unit %Rec RPD Limit Result Limits 252 Chloride 22.1 284.7 104 90 - 110 20 mg/Kg

Client: Ensolum Job ID: 890-3580-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

GC VOA

Prep Batch: 41898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Total/NA	Solid	5035	
890-3580-2	SW01	Total/NA	Solid	5035	
890-3580-5	SW04	Total/NA	Solid	5035	
MB 880-41898/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-41898/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-41898/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3585-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-3585-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 41994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Total/NA	Solid	8021B	41898
890-3580-2	SW01	Total/NA	Solid	8021B	41898
890-3580-5	SW04	Total/NA	Solid	8021B	41898
MB 880-41898/5-A	Method Blank	Total/NA	Solid	8021B	41898
LCS 880-41898/1-A	Lab Control Sample	Total/NA	Solid	8021B	41898
LCSD 880-41898/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	41898
890-3585-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	41898
890-3585-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	41898

Prep Batch: 42103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-4	SW03	Total/NA	Solid	5035	
MB 880-42103/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-42103/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-42103/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22507-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-22507-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 42128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-4	SW03	Total/NA	Solid	8021B	42103
MB 880-42103/5-A	Method Blank	Total/NA	Solid	8021B	42103
MB 880-42128/101	Method Blank	Total/NA	Solid	8021B	
LCS 880-42103/1-A	Lab Control Sample	Total/NA	Solid	8021B	42103
LCSD 880-42103/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	42103
880-22507-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	42103
880-22507-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	42103

Analysis Batch: 42230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Total/NA	Solid	Total BTEX	
890-3580-2	SW01	Total/NA	Solid	Total BTEX	
890-3580-4	SW03	Total/NA	Solid	Total BTEX	
890-3580-5	SW04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41325

Released to Imaging: 2/21/2023 12:16:35 PM

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Total/NA	Solid	8015NM Prep	

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Client: Ensolum Job ID: 890-3580-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

GC Semi VOA (Continued)

Prep Batch: 41325 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-2	SW01	Total/NA	Solid	8015NM Prep	
890-3580-4	SW03	Total/NA	Solid	8015NM Prep	
890-3580-5	SW04	Total/NA	Solid	8015NM Prep	
MB 880-41325/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41325/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41325/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3574-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3574-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Total/NA	Solid	8015B NM	41325
890-3580-2	SW01	Total/NA	Solid	8015B NM	41325
890-3580-4	SW03	Total/NA	Solid	8015B NM	41325
890-3580-5	SW04	Total/NA	Solid	8015B NM	41325
MB 880-41325/1-A	Method Blank	Total/NA	Solid	8015B NM	41325
LCS 880-41325/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41325
LCSD 880-41325/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41325
890-3574-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41325
890-3574-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41325

Analysis Batch: 41645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Total/NA	Solid	8015 NM	
890-3580-2	SW01	Total/NA	Solid	8015 NM	
890-3580-4	SW03	Total/NA	Solid	8015 NM	
890-3580-5	SW04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Soluble	Solid	DI Leach	
890-3580-2	SW01	Soluble	Solid	DI Leach	
890-3580-4	SW03	Soluble	Solid	DI Leach	
890-3580-5	SW04	Soluble	Solid	DI Leach	
MB 880-41257/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41257/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41257/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3580-4 MS	SW03	Soluble	Solid	DI Leach	
890-3580-4 MSD	SW03	Soluble	Solid	DI Leach	

Analysis Batch: 41535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-1	FS01	Soluble	Solid	300.0	41257
890-3580-2	SW01	Soluble	Solid	300.0	41257
890-3580-4	SW03	Soluble	Solid	300.0	41257
890-3580-5	SW04	Soluble	Solid	300.0	41257
MB 880-41257/1-A	Method Blank	Soluble	Solid	300.0	41257
LCS 880-41257/2-A	Lab Control Sample	Soluble	Solid	300.0	41257
LCSD 880-41257/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41257

Client: Ensolum Job ID: 890-3580-1 Project/Site: Redhead Fed Com 1H

SDG: 03D2024104

HPLC/IC (Continued)

Analysis Batch: 41535 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3580-4 MS	SW03	Soluble	Solid	300.0	41257
890-3580-4 MSD	SW03	Soluble	Solid	300.0	41257

Client: Ensolum Job ID: 890-3580-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: FS01 Lab Sample ID: 890-3580-1

Matrix: Solid

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	41898	12/15/22 10:12	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41994	12/16/22 17:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42230	12/19/22 16:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			41645	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.001 g	10 mL	41325	12/08/22 09:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/12/22 02:58	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 19:45	CH	EET MID

Client Sample ID: SW01 Lab Sample ID: 890-3580-2

Date Collected: 12/05/22 00:00 Matrix: Solid

Date Received: 12/05/22 16:38

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	41898	12/15/22 10:12	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41994	12/16/22 17:57	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42230	12/19/22 16:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			41645	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	41325	12/08/22 09:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/12/22 03:20	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	41257	12/07/22 10:36	KS	EET MIC
Soluble	Analysis	300.0		1			41535	12/11/22 19:50	CH	EET MID

Client Sample ID: SW03 Lab Sample ID: 890-3580-4 **Matrix: Solid**

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

	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	42103	12/17/22 17:17	MNR	EET MID
Total/NA	Analysis	8021B		10	5 mL	5 mL	42128	12/21/22 10:49	SM	EET MID
Total/NA	Analysis	Total BTEX		1			42230	12/21/22 14:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			41645	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41325	12/08/22 09:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/12/22 03:41	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 19:56	CH	EET MID

Client Sample ID: SW04 Lab Sample ID: 890-3580-5

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

	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	41898	12/15/22 10:12	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41994	12/16/22 18:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42230	12/19/22 16:02	SM	EET MID

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Matrix: Solid

Lab Chronicle

Client: Ensolum Job ID: 890-3580-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: SW04

Lab Sample ID: 890-3580-5

Matrix: Solid

Date Collected: 12/05/22 00:00 Date Received: 12/05/22 16:38

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			41645	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41325	12/08/22 09:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/12/22 04:03	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 20:13	CH	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: 890-3580-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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 06-30-23	
Texas	NE	ELAP	T104704400-22-25		
The following analytes	are included in this report, bu	It the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for	
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		

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Method Summary

Client: Ensolum Job ID: 890-3580-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

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Sample Summary

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Job ID: 890-3580-1

SDG: 03D2024104

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3580-1	FS01	Solid	12/05/22 00:00	12/05/22 16:38	4
890-3580-2	SW01	Solid	12/05/22 00:00	12/05/22 16:38	0 - 4
890-3580-4	SW03	Solid	12/05/22 00:00	12/05/22 16:38	0 - 4
890-3580-5	SW04	Solid	12/05/22 00:00	12/05/22 16:38	0 - 4

Relinquished by: (Signature)

Received by: (Signature)

0.0.00

1628

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

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

eurofins

Xenco

Environment Testing

Phone:

Company Name: Bill to: (if different)

Ensolum, LLC Kalei Jennings

Project Manager:

Company Name:

Ensolum, LLC Josh Adams

13 14

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 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

State of Project:	Program: UST/PST PRP Brownfields RRC Superfund	Work Order Comments	www.xenco.com Page	WORK Order No:
1	RRC Superfund	TS .	e of	

Circle Method(s) and I Other Signature of this documents Signature of the second Seco					POCAIS	2003	2001C	SWOT	FSOI	Sample Identification	Total Containers:	Sample Custody Seals	Cooler Custody Seals:	Samples Received Intact	SAMPLE RECEIPT	PO#:	Sampler's Name:	Project Location:	Project Number:	Project Name:	Phone:	City, State ZIP:	Address:
Circle Method(s) and Metal(s) to be analyzed Notice: Signature of this document and relinquishment of so	11				2	U	S	S 16	21 5	Matrix	Co	Yes No	Yes No (NIA)	(Yes) No	Temp Blank:		Julianna Falcomata	32.210278,-103,7	DSD 2172 Y/D4	Pedhead Feda	303-517-8437	Midland, TX 79701	601 N Marienfeld St Suite 400
TCLP / SP	Mddst vadag				252	7-5-72		15-12	15-72	Date Time Sampled Sampled	Corrected Temperature:	N/A Temperature Reading:	Correction Factor:	Thermometer ID: //	(Yes) No Wet Ice:	the lab, if received by 4:30pm		12250 Due Date:		Turn Around	Email: k	0	
TCLP / SPLP 6010: 8RCRA tes a valid purchase order from client of assume any responsibility for a	OM Texas 11 Al Sh				0-4/61	7410	74,0	7-4, 6 1	4 61	Depth Grab/ # of Comp Cont	4.0	5	C D	aran	Yes No	l	day received by		Rush Code		jennings@ensolum	City, State ZIP:	Address:
AS BA BE CD Cr CO CU Pb Mn Mo pany to Eurofins Xenco, its affiliates and subcontractors osses or expenses incurred by the client if such losses	Sh As Ba Be B Cd Ca Cr Co Cu Fe Pb				~ ~ ~	V, V, V,		4 V	0,0,0	CHLOF	802	890-3580	EPA:	300	0.0)					ANALYSIS REC	Email: kjennings@ensolum.com, jadams@ensolum.com	Midland, TX 79701	601 N Marienfeld St Suite 400
Ni Se Ag TI U Hg: 163 Ni Se Ag TI U Hg: 163 It assigns standard terms and conditions are the following the control of the co	Ma Mn Mo Ni K Se										Custody									REQUEST	Deliverables: EDD L AD	Reporting: Level II Level III	State of Project:
Hg: 1631 / 245.1 / 7470 / 7471 onditions the control	Ag SiO₂ Na Sr Tl Sn U V Zn							01-07504476016	1	Sample Comments	NaCH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	Na ₂ S ₂ O ₃ : NaSO ₃	NaHSO4: NABIS	H ₃ PO ₄ : HP	H ₂ SU ₄ : H ₂ NaCH: Na		2	None: NO DI Water: H ₂ O	Preservative Codes	ADaP1 LJ Other:]
ng: 2/21/2	202	3 12	:16:	35 P.	M					Page	2	5 o	f 2	7									

Login Sample Receipt Checklist

 Client: Ensolum
 Job Number: 890-3580-1

 SDG Number: 03D2024104

List Source: Eurofins Carlsbad

Login Number: 3580 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	
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: 890-3580-1

 SDG Number: 03D2024104

List Source: Eurofins Midland List Creation: 12/07/22 11:05 AM

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 3580

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: Josh Adams Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701

Generated 1/16/2023 11:27:32 AM Revision 1

JOB DESCRIPTION

Redhead Fed Com 1H SDG NUMBER 03D2024104

JOB NUMBER

890-3586-1

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

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Revision 1

Laboratory Job ID: 890-3586-1 Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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Definitions/Glossary

Client: Ensolum Job ID: 890-3586-1 Project/Site: Redhead Fed Com 1H

SDG: 03D2024104

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
Н	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

LOQ

Abbreviation	ion 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	
DI C	Desiring Level Consentanting (Dedical angleton)	

		•
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	

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

Limit of Quantitation (DoD/DOE)

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 sho	wn)
טא	Not betected at the reporting limit (or MDL or EDL if Sho	/WII)

NEG	Negative / Absent	
POS	Positive / Present	

PRES	Presumptive
QC	Quality Control

RER Relative Error Ratio (Radiocher	nistry)
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RL	Reporting Limit	or Requested Limit	(Radiochemistry)

RPD Relative Percent Difference, a measure of the relative di	ifference between two points
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TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ**

TNTC Too Numerous To Count

Case Narrative

Client: Ensolum

Job ID: 890-3586-1 SDG: 03D2024104 Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3586-1

Revision

The report being provided is a revision of the original report sent on 12/19/2022. The report (revision 1) is being revised due to: Per client email, requesting rush chloride re run on samples FS02 and FS03.

Receipt

The samples were received on 12/6/2022 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.4° C.

Receipt Exceptions

The following samples analyzed were received and analyzed from an unpreserved bulk soil jar: SW05 (890-3586-1), FS02 (890-3586-2), FS03 (890-3586-3), FS04 (890-3586-4), FS05 (890-3586-5) and FS06 (890-3586-6).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-41938 and analytical batch 880-41993 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-41993 recovered above the upper control limit for Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were ran within 12 hours of passing CCV; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SW05 (890-3586-1). 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 8015B NM: The surrogate recovery for the blank associated with preparation batch 880-41383 and analytical batch 880-41511 was outside the upper control limits.

Method 8015B NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-41511/5). Evidence of matrix interferences is not obvious.

Method 8015B NM: The surrogate recovery for the blank associated with preparation batch 880-41382 and analytical batch 880-41511 was outside the upper control limits.

Method 8015B NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-41511/47). Evidence of matrix interferences is not obvious.

Method 8015B NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-41511/31). Evidence of matrix interferences is not obvious.

Method 8015B NM: Surrogate recovery for the following sample was outside control limits: (CCV 880-41511/58). 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.

General Chemistry

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

Organic Prep

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

Case Narrative

Client: Ensolum

Job ID: 890-3586-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Job ID: 890-3586-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

VOA Prep

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

Matrix: Solid

Lab Sample ID: 890-3586-1

Client: Ensolum Job ID: 890-3586-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: SW05

Date Collected: 12/06/22 11:40 Date Received: 12/06/22 16:00

Sample Depth: 0 - 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 01:12	1
Toluene	<0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 01:12	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 01:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/15/22 14:55	12/17/22 01:12	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 01:12	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/15/22 14:55	12/17/22 01:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	54	S1-	70 - 130			12/15/22 14:55	12/17/22 01:12	1
1,4-Difluorobenzene (Surr)	104		70 - 130			12/15/22 14:55	12/17/22 01:12	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			12/19/22 16:21	1
Mothod: SW946 9015 NM Dio	cal Panga (Organice (I	DBO) (GC)					

Method: 5W846 8015 NM - Diesel Range Organics (DRO) (GC)								
	Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Total TPH	<49.9 U	49.9	mg/Kg			12/12/22 10:03	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg	_	12/08/22 14:16	12/11/22 03:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/08/22 14:16	12/11/22 03:24	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/08/22 14:16	12/11/22 03:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130			12/08/22 14:16	12/11/22 03:24	1

o-Terphenyl	116		70 - 130			12/08/22 14:16	12/11/22 03:24	1
Method: MCAWW 300.0 - Anior	•		•					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	913		4.95	mg/Kg			12/11/22 20:41	1

Client Sample ID: FS02

Date Collected: 12/06/22 12:15

Lab Sample ID: 890-3586-2

Matrix: Solid

Date Received: 12/06/22 16:00

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

Sample Depth: 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 01:32	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 01:32	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 01:32	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/15/22 14:55	12/17/22 01:32	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 01:32	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/15/22 14:55	12/17/22 01:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			12/15/22 14:55	12/17/22 01:32	1

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1

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12

Matrix: Solid

Lab Sample ID: 890-3586-2

Client: Ensolum Job ID: 890-3586-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: FS02

Date Collected: 12/06/22 12:15 Date Received: 12/06/22 16:00

Sample Depth: 4

Surrogate	%Recovery Quali	lifier Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	104	70 - 130	12/15/22 14:55	12/17/22 01:32	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			12/19/22 16:21	1

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

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg		_	12/12/22 10:03	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 03:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 03:44	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 03:44	1
Surrogate	%Recovery	Qualifier	l imits			Prenared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	12/08/22 14:16	12/11/22 03:44	1
o-Terphenyl	114		70 - 130	12/08/22 14:16	12/11/22 03:44	1

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	97.6	H	5.02	mg/Kg			01/12/23 18:03	1

Lab Sample ID: 890-3586-3 **Client Sample ID: FS03 Matrix: Solid**

Date Collected: 12/06/22 12:10 Date Received: 12/06/22 16:00

Sample Depth: 4

Method: SW846 8021B - Volatile Organic Compounds (Method:	: SW846 8021B	- Volatile Organic	Compounds (GC)
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Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 02:56	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 02:56	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 02:56	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/15/22 14:55	12/17/22 02:56	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 02:56	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/15/22 14:55	12/17/22 02:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130			12/15/22 14:55	12/17/22 02:56	1
1 / Diffuorobenzene (Surr)	02		70 120			10/15/00 11:55	12/17/22 02:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzea	DII Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	12/15/22 14:55	12/17/22 02:56	1
1,4-Difluorobenzene (Surr)	92		70 - 130	12/15/22 14:55	12/17/22 02:56	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			12/19/22 16:21	1

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

Analyte	Result Qua	alifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			12/12/22 10:03	1

Job ID: 890-3586-1

Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: FS03

Lab Sample ID: 890-3586-3 Date Collected: 12/06/22 12:10 **Matrix: Solid** Date Received: 12/06/22 16:00

Sample Depth: 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 04:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 04:04	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 04:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130			12/08/22 14:16	12/11/22 04:04	1
o-Terphenyl	122		70 - 130			12/08/22 14:16	12/11/22 04:04	1

Method: MCAWW 300.0 - Anio	ns, Ion Chr	omatogra	phy - Soluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	209	H	4.97	mg/Kg			01/12/23 18:08	1

Lab Sample ID: 890-3586-4 **Client Sample ID: FS04** Date Collected: 12/06/22 13:00 **Matrix: Solid**

Date Received: 12/06/22 16:00

Sample Depth: 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 03:17	1
Toluene	< 0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 03:17	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 03:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		12/15/22 14:55	12/17/22 03:17	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		12/15/22 14:55	12/17/22 03:17	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		12/15/22 14:55	12/17/22 03:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	128		70 - 130			12/15/22 14:55	12/17/22 03:17	1
1,4-Difluorobenzene (Surr)	94		70 - 130			12/15/22 14:55	12/17/22 03:17	1
Total BTEX Method: SW846 8015 NM - Die	<0.00398		0.00398 DRO) (GC)	mg/Kg			12/19/22 16:21	1
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/12/22 10:03	1
- Method: SW846 8015B NM - D	iesel Range	Organics	(DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Casalina Danga Organica	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 04:25	1
0 0								
(GRO)-C6-C10 Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/11/22 04:25	1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<50.0 <50.0		50.0 50.0	mg/Kg mg/Kg		12/08/22 14:16 12/08/22 14:16	12/11/22 04:25 12/11/22 04:25	1

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<u>12/08/22 14:16</u> <u>12/11/22 04:25</u>

12/08/22 14:16 12/11/22 04:25

70 - 130

70 - 130

103

115

1-Chlorooctane

o-Terphenyl

Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1

SDG: 03D2024104

Client Sample ID: FS04

Date Collected: 12/06/22 13:00 Date Received: 12/06/22 16:00

Lab Sample ID: 890-3586-4 **Matrix: Solid**

Sample Depth: 4

Client: Ensolum

Method: MCAWW 300.0 - Anic	ons, Ion Chromatograp	hy - Soluble					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	515	4.99	mg/Kg			12/11/22 20:58	1

Client Sample ID: FS05 Lab Sample ID: 890-3586-5 Matrix: Solid

Date Collected: 12/06/22 13:05 Date Received: 12/06/22 16:00

Sample Depth: 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 03:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 03:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 03:38	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		12/15/22 14:55	12/17/22 03:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/17/22 03:38	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		12/15/22 14:55	12/17/22 03:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			12/15/22 14:55	12/17/22 03:38	1
1,4-Difluorobenzene (Surr)	101		70 - 130			12/15/22 14:55	12/17/22 03:38	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg	_		12/19/22 16:21	1
Mothod: SW846 8015 NM - Dio	col Pango (Organice (DPO) (GC)					

	Method: SW846 8015 NM - Die	esel Range (Organics (D	RO) (GC)					
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Total TPH	<49.9	U	49.9	mg/Kg			12/12/22 10:03	1
٠.	<u> </u>								

Method: SW846 8015B NM - D	iesel Range	Organics	(DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		12/08/22 14:16	12/11/22 04:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		12/08/22 14:16	12/11/22 04:45	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		12/08/22 14:16	12/11/22 04:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130			12/08/22 14:16	12/11/22 04:45	1
o-Terphenyl	123		70 - 130			12/08/22 14:16	12/11/22 04:45	1

Method: MCAWW 300.0 - Anio	ns, Ion Chro	matograp	hy - Soluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	546		4.95	mg/Kg			12/11/22 21:04	1

Matrix: Solid

Lab Sample ID: 890-3586-6

Client: Ensolum Job ID: 890-3586-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Client Sample ID: FS06

Date Collected: 12/06/22 13:10 Date Received: 12/06/22 16:00

Sample Depth: 4

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 03:58	1
Toluene	< 0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 03:58	1
Ethylbenzene	< 0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 03:58	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		12/15/22 14:55	12/17/22 03:58	1
o-Xylene	< 0.00201	U	0.00201	mg/Kg		12/15/22 14:55	12/17/22 03:58	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		12/15/22 14:55	12/17/22 03:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130			12/15/22 14:55	12/17/22 03:58	
1,4-Difluorobenzene (Surr)	97		70 - 130			12/15/22 14:55	12/17/22 03:58	1
	- Total RTF	X Calculat	ion					
Method: TAL SOP Total BTEX	- IOLAI DIL							
Method: TAL SOP Total BTEX Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Total BTEX	<0.00402	Qualifier U	0.00402	<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared	Analyzed 12/19/22 16:21	Dil Fac
Analyte	Result <0.00402	Qualifier U	0.00402		<u>D</u> 	Prepared Prepared		1
Analyte Total BTEX Method: SW846 8015 NM - Die	Result <0.00402	Qualifier U Organics (Qualifier	0.00402 DRO) (GC)	mg/Kg	<u> </u>	<u> </u>	12/19/22 16:21	1
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte Total TPH	Result <0.00402 esel Range (Result <49.9	Qualifier U Organics (I Qualifier U	0.00402 DRO) (GC) RL 49.9	mg/Kg Unit	<u> </u>	<u> </u>	12/19/22 16:21 Analyzed	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte	Result <0.00402 esel Range (Result <49.9 Diesel Range	Qualifier U Organics (I Qualifier U	0.00402 DRO) (GC) RL 49.9	mg/Kg Unit	<u> </u>	<u> </u>	12/19/22 16:21 Analyzed	1
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte Total TPH Method: SW846 8015B NM - D Analyte Gasoline Range Organics	Result <0.00402 esel Range (Result <49.9 Diesel Range	Qualifier U Organics (Qualifier U Organics Qualifier Qualifier	0.00402 DRO) (GC) RL 49.9 (DRO) (GC)	mg/Kg Unit mg/Kg	<u>D</u>	Prepared	12/19/22 16:21 Analyzed 12/12/22 10:03	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte Total TPH Method: SW846 8015B NM - D Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <0.00402 esel Range (Result <49.9 Diesel Range Result	Qualifier U Organics (I Qualifier U Organics Qualifier U Organics Qualifier U	0.00402 DRO) (GC) RL 49.9 (DRO) (GC) RL	mg/Kg Unit mg/Kg Unit	<u>D</u>	Prepared Prepared 12/08/22 14:20	12/19/22 16:21 Analyzed 12/12/22 10:03 Analyzed	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte Total TPH Method: SW846 8015B NM - D Analyte Gasoline Range Organics (GRO)-C6-C10	Result <0.00402	Qualifier U Organics (I Qualifier U Organics Qualifier U Organics Qualifier U	0.00402 DRO) (GC) RL 49.9 (DRO) (GC) RL 49.9	mg/Kg Unit mg/Kg Unit mg/Kg	<u>D</u>	Prepared 12/08/22 14:20 12/08/22 14:20	Analyzed 12/19/22 10:03 Analyzed 12/12/22 10:03 Analyzed 12/10/22 18:35	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte Total TPH Method: SW846 8015B NM - D Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result	Qualifier U Organics (I Qualifier U Organics Qualifier U Organics Qualifier U	0.00402 DRO) (GC) RL 49.9 (DRO) (GC) RL 49.9 49.9	mg/Kg Unit mg/Kg Unit mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 12/08/22 14:20 12/08/22 14:20	Analyzed 12/19/22 10:03 Analyzed 12/12/22 10:03 Analyzed 12/10/22 18:35 12/10/22 18:35	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Die Analyte Total TPH Method: SW846 8015B NM - D Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U Organics (I Qualifier U Organics Qualifier U Organics Qualifier U	0.00402 DRO) (GC) RL 49.9 (DRO) (GC) RL 49.9 49.9 49.9	mg/Kg Unit mg/Kg Unit mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 12/08/22 14:20 12/08/22 14:20	Analyzed 12/19/22 10:03 Analyzed 12/12/22 10:03 Analyzed 12/10/22 18:35 12/10/22 18:35	Dil Fac

4.96

mg/Kg

499

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12/11/22 21:09

Surrogate Summary

Client: Ensolum Job ID: 890-3586-1 SDG: 03D2024104 Project/Site: Redhead Fed Com 1H

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-22323-A-21-E MS	Matrix Spike	89	100	
880-22323-A-21-F MSD	Matrix Spike Duplicate	106	94	
890-3586-1	SW05	54 S1-	104	
890-3586-2	FS02	111	104	
890-3586-3	FS03	107	92	
890-3586-4	FS04	128	94	
890-3586-5	FS05	117	101	
890-3586-6	FS06	118	97	
LCS 880-41938/1-A	Lab Control Sample	96	99	
LCSD 880-41938/2-A	Lab Control Sample Dup	90	97	
MB 880-41899/5-A	Method Blank	102	87	
MB 880-41938/5-A	Method Blank	92	93	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

		1CO1	Perce OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
820-6683-A-1-E MS	Matrix Spike	110	102	
820-6683-A-1-F MSD	Matrix Spike Duplicate	106	99	
880-22328-A-21-C MS	Matrix Spike	99	95	
880-22328-A-21-D MSD	Matrix Spike Duplicate	109	103	
890-3586-1	SW05	103	116	
890-3586-2	FS02	102	114	
890-3586-3	FS03	113	122	
890-3586-4	FS04	103	115	
890-3586-5	FS05	110	123	
890-3586-6	FS06	101	115	
LCS 880-41382/2-A	Lab Control Sample	99	106	
LCS 880-41383/2-A	Lab Control Sample	111	116	
LCSD 880-41382/3-A	Lab Control Sample Dup	93	101	
LCSD 880-41383/3-A	Lab Control Sample Dup	110	114	
MB 880-41382/1-A	Method Blank	121	178 S1+	
MB 880-41383/1-A	Method Blank	127	185 S1+	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Job ID: 890-3586-1 Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-41899/5-A

Matrix: Solid

Matrix: Solid

Analysis Batch: 41993

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41899

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:18	12/16/22 10:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:18	12/16/22 10:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:18	12/16/22 10:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/15/22 10:18	12/16/22 10:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 10:18	12/16/22 10:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/15/22 10:18	12/16/22 10:53	1

MB MB

Surrogate	%Recovery (Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

12/15/22 10:18 12/16/22 10:53 **Client Sample ID: Method Blank**

12/15/22 10:18 12/16/22 10:53

Analyzed

Prep Type: Total/NA

Prepared

Prep Batch: 41938

Dil Fac

Analysis Batch: 41993

Lab Sample ID: MB 880-41938/5-A

MB MB

	י שואו	1410						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/16/22 22:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/16/22 22:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/16/22 22:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		12/15/22 14:55	12/16/22 22:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/15/22 14:55	12/16/22 22:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		12/15/22 14:55	12/16/22 22:04	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	12/15/22 14:55	12/16/22 22:04	1
1,4-Difluorobenzene (Surr)	93		70 - 130	12/15/22 14:55	12/16/22 22:04	1

Lab Sample ID: LCS 880-41938/1-A

Matrix: Solid

Analysis Batch: 41993

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

Client Sample ID: Lab Control Sample Dup

Prep Batch: 41938

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09576		mg/Kg		96	70 - 130	
Toluene	0.100	0.08860		mg/Kg		89	70 - 130	
Ethylbenzene	0.100	0.08429		mg/Kg		84	70 - 130	
m-Xylene & p-Xylene	0.200	0.1814		mg/Kg		91	70 - 130	
o-Xylene	0.100	0.09253		mg/Kg		93	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	' Limits
4-Bromofluorobenzene (Surr)	96	70 - 130
1,4-Difluorobenzene (Surr)	99	70 - 130

Lab Sample ID: LCSD 880-41938/2-A

Matrix: Solid							Prep Ty	pe: Tot	al/NA
Analysis Batch: 41993							Prep E	atch: 4	41938
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09194		mg/Kg		92	70 - 130	4	35

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QC Sample Results

Client: Ensolum Job ID: 890-3586-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

Lab Sample ID: LCSD 880-41938/2-A

Matrix: Solid

Analysis Batch: 41993

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 41938

LCSD LCSD Spike %Rec **RPD** Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Toluene 0.100 0.08473 mg/Kg 85 70 - 130 4 35 Ethylbenzene 0.100 0.07875 mg/Kg 79 70 - 130 7 35 0.200 0.1684 mg/Kg 84 70 - 130 7 35 m-Xylene & p-Xylene 0.100 86 35 o-Xylene 0.08556 mg/Kg 70 - 130

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 880-22323-A-21-E MS **Client Sample ID: Matrix Spike**

Matrix: Solid

Analysis Batch: 41993

Prep Type: Total/NA

Prep Batch: 41938

Sample Sample Spike MS MS %Rec Result Qualifier Analyte Added Result Qualifier D %Rec Limits Unit Benzene <0.00200 U F1 0.0998 0.06182 F1 62 70 - 130 mg/Kg Toluene <0.00200 UF1 0.0998 0.05097 F1 mg/Kg 51 70 - 130 Ethylbenzene <0.00200 UF1 0.0998 0.04186 F1 mg/Kg 42 70 - 130 m-Xylene & p-Xylene 0.200 0.08464 F1 42 <0.00401 UF1 mg/Kg 70 - 130 o-Xylene <0.00200 UF1 0.0998 0.04276 F1 mg/Kg 43 70 - 130

MS MS

Surrogate	%Recovery Qualitier	Limits
4-Bromofluorobenzene (Surr)	89	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: 880-22323-A-21-F MSD

Matrix: Solid

Analysis Batch: 41993

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41938

/ indigoto Dutom 11000											
-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00200	U F1	0.0990	0.04526	F1	mg/Kg		46	70 - 130	31	35
Toluene	<0.00200	U F1	0.0990	0.04195	F1	mg/Kg		42	70 - 130	19	35
Ethylbenzene	<0.00200	U F1	0.0990	0.04018	F1	mg/Kg		41	70 - 130	4	35
m-Xylene & p-Xylene	< 0.00401	U F1	0.198	0.08291	F1	mg/Kg		42	70 - 130	2	35
o-Xylene	<0.00200	U F1	0.0990	0.04209	F1	mg/Kg		43	70 - 130	2	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

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

Lab Sample ID: MB 880-41382/1-A

Matrix: Solid

Analysis Batch: 41511

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

Prep Batch: 41382

MB MB Result Qualifier RL Unit Analyte Prepared Analyzed Gasoline Range Organics <50.0 U 50.0 mg/Kg 12/08/22 14:16 12/10/22 20:16

(GRO)-C6-C10

Client: Ensolum Job ID: 890-3586-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

Lab Sample ID: MB 880-41382/1-A
Matrix: Solid
Analysis Batch: 41511

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 41382

MB	MB						
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/10/22 20:16	1
<50.0	U	50.0	mg/Kg		12/08/22 14:16	12/10/22 20:16	1
МВ	MB						
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
121		70 - 130			12/08/22 14:16	12/10/22 20:16	1
178	S1+	70 - 130			12/08/22 14:16	12/10/22 20:16	1
	Result	Result Qualifier <50.0 U <50.0 U MB MB %Recovery Qualifier	Result Qualifier RL <50.0	Result Qualifier RL Unit <50.0	Result Qualifier RL Unit D <50.0	Result Qualifier RL Unit D Prepared <50.0	Result Qualifier RL Unit D Prepared 12/08/22 14:16 Analyzed 12/10/22 20:16 <50.0

- Terprienyi		170 07.	70 - 100				12/0	0,22 11.1	0 12/10/22 20:10
Lab Sample ID: LCS 880-4 Matrix: Solid Analysis Batch: 41511	11382/2-A					Clier	nt Sai	nple ID	: Lab Control Sample Prep Type: Total/NA Prep Batch: 41382
			Spike	LCS	LCS				%Rec
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10			1000	883.9		mg/Kg		88	70 - 130
Diesel Range Organics (Over			1000	977.6		mg/Kg		98	70 - 130
C10-C28)									
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	99		70 - 130						
o-Terphenyl	106		70 - 130						

Lab Sample ID: LCSD 880-41382/3-A	ab Sample ID: LCSD 880-41382/3-A				Client Sample ID: Lab Control Sample Dup								
Matrix: Solid						Prep Ty	pe: Tot	al/NA					
Analysis Batch: 41511							Prep E	atch:	41382				
	Spike	LCSD	LCSD				%Rec		RPD				
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit				
Gasoline Range Organics (GRO)-C6-C10	1000	853.2		mg/Kg		85	70 - 130	4	20				
Diesel Range Organics (Over C10-C28)	1000	945.4		mg/Kg		95	70 - 130	3	20				
LCSD LCSD													

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	93		70 - 130
o-Terphenyl	101		70 - 130

Lab Sample ID: 880-2232 Matrix: Solid Analysis Batch: 41511							CI	ient Sa	mple ID: Matrix Spik Prep Type: Total/N Prep Batch: 4138
	•	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	880.6		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	999	891.9		mg/Kg		89	70 - 130
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
1-Chlorooctane	99		70 - 130						
o-Terphenyl	95		70 - 130						

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Client: Ensolum Job ID: 890-3586-1 Project/Site: Redhead Fed Com 1H SDG: 03D2024104

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

Lab Sample ID: 880-22328-A-21-D MSD

Matrix: Solid

Analysis Batch: 41511

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41382

RPD Sample Sample Spike MSD MSD %Rec Result Qualifier Result Qualifier Added Unit %Rec Limits RPD Limit Analyte <50.0 U Gasoline Range Organics 997 986.1 mg/Kg 96 70 - 130 11 20 (GRO)-C6-C10 Diesel Range Organics (Over 997 940.5 94 70 - 130 5 <50.0 U mg/Kg 20

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	103		70 - 130

Lab Sample ID: MB 880-41383/1-A **Client Sample ID: Method Blank**

Matrix: Solid

Analysis Batch: 41511

Prep Type: Total/NA

Prep Batch: 41383

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 mg/Kg 12/08/22 14:20 12/10/22 09:21 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 12/08/22 14:20 12/10/22 09:21 C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 12/08/22 14:20 12/10/22 09:21

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	127	70 - 130	12/08/22 14:20	12/10/22 09:21	1
o-Terphenyl	185 S1+	70 - 130	12/08/22 14:20	12/10/22 09:21	1

Lab Sample ID: LCS 880-41383/2-A

Matrix: Solid

Analysis Batch: 41511

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

Prep Batch: 41383

Spike LCS LCS %Rec Added Analyte Result Qualifier Limits Unit %Rec Gasoline Range Organics 1000 70 - 130 972.8 mg/Kg 97 (GRO)-C6-C10 Diesel Range Organics (Over 1000 1081 mg/Kg 108 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	111	70 - 130
o-Terphenyl	116	70 - 130

Lab Sample ID: LCSD 880-41383/3-A

Matrix: Solid

Analysis Batch: 41511

Gasoline Range Organics

Diesel Range Organics (Over

Client Sample	ID:	Lab	Contr	ol	Sample	Dup

110

Prep Type: Total/NA Prep Batch: 41383

%Rec **RPD** %Rec Limits **RPD** Limit 99 70 - 130 2 20

70 - 130

C10-C28)

(GRO)-C6-C10

Analyte

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Spike

Added

1000

1000

LCSD LCSD

993.9

1099

Result Qualifier

Unit

mg/Kg

mq/Kq

Client: Ensolum Job ID: 890-3586-1 SDG: 03D2024104 Project/Site: Redhead Fed Com 1H

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

Lab Sample ID: LCSD 880-41383/3-A

Matrix: Solid

Analysis Batch: 41511

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 41383

LCSD LCSD

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 110 70 - 130 o-Terphenyl 114 70 - 130

Client Sample ID: Matrix Spike Lab Sample ID: 820-6683-A-1-E MS Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 41511

Analysis Batch: 41511									Prep l	Batch: 41383
	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	999	1070		mg/Kg		107	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	999	956.3		mg/Kg		96	70 - 130	

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

Lab Sample ID: 820-6683-A-1-F MSD

Mat

Ana

trix: Solid	Prep Type: Total/NA
alysis Batch: 41511	Prep Batch: 41383

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits **RPD** Analyte Unit D %Rec Limit Gasoline Range Organics <50.0 U 997 990.1 mg/Kg 99 70 - 130 8 20 (GRO)-C6-C10 997 Diesel Range Organics (Over <50.0 U 916.3 mg/Kg 92 70 - 130 20

C10-C28)

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-41257/1-A Client Sample ID: Method Blank **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 41535

Allalysis Datell. 41000								
	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/11/22 18:20	1

Lab Sample ID: LCS 880-41257/2-A **Client Sample ID: Lab Control Sample**

Matrix: Solid

Analysis Batch: 41535

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	257.0		mg/Kg		103	90 - 110	

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Prep Type: Soluble

QC Sample Results

Client: Ensolum Job ID: 890-3586-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-41257/3-A

Client Sample ID: Lab Control Sample Dup
Matrix: Solid

Prep Type: Soluble

Analysis Batch: 41535

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Chloride 250 256.5 mg/Kg 103 90 - 110 0 20

Lab Sample ID: 890-3580-A-4-D MS

Client Sample ID: Matrix Spike

Matrix: Solid Prep Type: Soluble

Analysis Batch: 41535

Sample Sample Spike MS MS %Rec **Analyte** Result Qualifier Added Result Qualifier Unit D %Rec Limits Chloride 252 90 - 110 22.1 286.9 mg/Kg 105

Lab Sample ID: 890-3580-A-4-E MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Soluble

Analysis Batch: 41535

Chloride 22.1 252 284.7 mg/Kg 104 90 - 110 1 2

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QC Association Summary

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1 SDG: 03D2024104

GC VOA

Prep Batch: 41899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-41899/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 41938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-1	SW05	Total/NA	Solid	5035	
890-3586-2	FS02	Total/NA	Solid	5035	
890-3586-3	FS03	Total/NA	Solid	5035	
890-3586-4	FS04	Total/NA	Solid	5035	
890-3586-5	FS05	Total/NA	Solid	5035	
890-3586-6	FS06	Total/NA	Solid	5035	
MB 880-41938/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-41938/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-41938/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-22323-A-21-E MS	Matrix Spike	Total/NA	Solid	5035	
880-22323-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 41993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-1	SW05	Total/NA	Solid	8021B	41938
890-3586-2	FS02	Total/NA	Solid	8021B	41938
890-3586-3	FS03	Total/NA	Solid	8021B	41938
890-3586-4	FS04	Total/NA	Solid	8021B	41938
890-3586-5	FS05	Total/NA	Solid	8021B	41938
890-3586-6	FS06	Total/NA	Solid	8021B	41938
MB 880-41899/5-A	Method Blank	Total/NA	Solid	8021B	41899
MB 880-41938/5-A	Method Blank	Total/NA	Solid	8021B	41938
LCS 880-41938/1-A	Lab Control Sample	Total/NA	Solid	8021B	41938
LCSD 880-41938/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	41938
880-22323-A-21-E MS	Matrix Spike	Total/NA	Solid	8021B	41938
880-22323-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	41938

Analysis Batch: 42242

Lab Sample ID 890-3586-1	Client Sample ID SW05	Prep Type Total/NA	Matrix Solid	Method Total BTEX	Prep Batch
890-3586-2	FS02	Total/NA	Solid	Total BTEX	
890-3586-3	FS03	Total/NA	Solid	Total BTEX	
890-3586-4	FS04	Total/NA	Solid	Total BTEX	
890-3586-5	FS05	Total/NA	Solid	Total BTEX	
890-3586-6	FS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-1	SW05	Total/NA	Solid	8015NM Prep	
890-3586-2	FS02	Total/NA	Solid	8015NM Prep	
890-3586-3	FS03	Total/NA	Solid	8015NM Prep	
890-3586-4	FS04	Total/NA	Solid	8015NM Prep	
890-3586-5	FS05	Total/NA	Solid	8015NM Prep	
MB 880-41382/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41382/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1 SDG: 03D2024104

GC Semi VOA (Continued)

Prep Batch: 41382 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-41382/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22328-A-21-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-22328-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 41383

Lab Sample ID 890-3586-6	Client Sample ID FS06	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-41383/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41383/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
820-6683-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
820-6683-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-1	SW05	Total/NA	Solid	8015B NM	41382
890-3586-2	FS02	Total/NA	Solid	8015B NM	41382
890-3586-3	FS03	Total/NA	Solid	8015B NM	41382
890-3586-4	FS04	Total/NA	Solid	8015B NM	41382
890-3586-5	FS05	Total/NA	Solid	8015B NM	41382
890-3586-6	FS06	Total/NA	Solid	8015B NM	41383
MB 880-41382/1-A	Method Blank	Total/NA	Solid	8015B NM	41382
MB 880-41383/1-A	Method Blank	Total/NA	Solid	8015B NM	41383
LCS 880-41382/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41382
LCS 880-41383/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41383
LCSD 880-41382/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41382
LCSD 880-41383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41383
820-6683-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41383
820-6683-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41383
880-22328-A-21-C MS	Matrix Spike	Total/NA	Solid	8015B NM	41382
880-22328-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41382

Analysis Batch: 41601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-1	SW05	Total/NA	Solid	8015 NM	
890-3586-2	FS02	Total/NA	Solid	8015 NM	
890-3586-3	FS03	Total/NA	Solid	8015 NM	
890-3586-4	FS04	Total/NA	Solid	8015 NM	
890-3586-5	FS05	Total/NA	Solid	8015 NM	
890-3586-6	FS06	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 41257

Lab Sample ID 890-3586-1	Client Sample ID SW05	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
890-3586-2	FS02	Soluble	Solid	DI Leach	
890-3586-3	FS03	Soluble	Solid	DI Leach	
890-3586-4	FS04	Soluble	Solid	DI Leach	
890-3586-5	FS05	Soluble	Solid	DI Leach	
890-3586-6	FS06	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1 SDG: 03D2024104

HPLC/IC (Continued)

Leach Batch: 41257 (Continued)

Lab Sample ID MB 880-41257/1-A	Client Sample ID Method Blank	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
LCS 880-41257/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41257/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3580-A-4-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3580-A-4-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 41535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-1	SW05	Soluble	Solid	300.0	41257
890-3586-4	FS04	Soluble	Solid	300.0	41257
890-3586-5	FS05	Soluble	Solid	300.0	41257
890-3586-6	FS06	Soluble	Solid	300.0	41257
MB 880-41257/1-A	Method Blank	Soluble	Solid	300.0	41257
LCS 880-41257/2-A	Lab Control Sample	Soluble	Solid	300.0	41257
LCSD 880-41257/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41257
890-3580-A-4-D MS	Matrix Spike	Soluble	Solid	300.0	41257
890-3580-A-4-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	41257

Analysis Batch: 43805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3586-2	FS02	Soluble	Solid	300.0	41257
890-3586-3	FS03	Soluble	Solid	300.0	41257

SDG: 03D2024104

Client Sample ID: SW05
Date Collected: 12/06/22 11:40
Date Received: 12/06/22 16:00

Lab Sample ID: 890-3586-1 Matrix: Solid

ed Analyst Lab

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	41938	12/15/22 14:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41993	12/17/22 01:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42242	12/19/22 16:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			41601	12/12/22 10:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41382	12/08/22 14:16	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41511	12/11/22 03:24	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 20:41	CH	EET MID

Client Sample ID: FS02 Lab Sample ID: 890-3586-2

Date Collected: 12/06/22 12:15

Date Received: 12/06/22 16:00

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount** Amount Number or Analyzed **Analyst** Lab Total/NA 5035 41938 12/15/22 14:55 MNR EET MID Prep 5.01 g 5 mL Total/NA 8021B 5 mL 12/17/22 01:32 MNR **EET MID** Analysis 5 mL 41993 1 Total/NA Total BTEX Analysis 1 42242 12/19/22 16:21 SM **EET MID** Total/NA 8015 NM 41601 **EET MID** Analysis 1 12/12/22 10:03 SM Total/NA Prep 8015NM Prep 10.01 g 10 mL 41382 12/08/22 14:16 DM **EET MID** Total/NA 8015B NM 41511 12/11/22 03:44 SM Analysis 1 uL 1 uL **EET MID** Soluble 41257 Leach DI Leach 4.98 g 50 mL 12/07/22 10:36 KS **EET MID** 300.0 43805 01/12/23 18:03 CH Soluble Analysis 1 0 mL 1.0 mL **EET MID**

Client Sample ID: FS03

Date Collected: 12/06/22 12:10

Lab Sample ID: 890-3586-3

Matrix: Solid

Date Received: 12/06/22 16:00

	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	41938	12/15/22 14:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41993	12/17/22 02:56	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42242	12/19/22 16:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			41601	12/12/22 10:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	41382	12/08/22 14:16	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41511	12/11/22 04:04	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			43805	01/12/23 18:08	CH	EET MID

Client Sample ID: FS04

Date Collected: 12/06/22 13:00

Lab Sample ID: 890-3586-4

Matrix: Solid

Date Received: 12/06/22 16:00

D T	Batch	Batch	D	Dil	Initial	Final	Batch	Prepared	Amalmat	11.
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	41938	12/15/22 14:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41993	12/17/22 03:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42242	12/19/22 16:21	SM	EET MID

Job ID: 890-3586-1

Client: Ensolum Project/Site: Redhead Fed Com 1H SDG: 03D2024104 **Client Sample ID: FS04**

Lab Sample ID: 890-3586-4 **Matrix: Solid**

Date Collected: 12/06/22 13:00 Date Received: 12/06/22 16:00

	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			41601	12/12/22 10:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41382	12/08/22 14:16	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41511	12/11/22 04:25	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 20:58	CH	EET MID

Client Sample ID: FS05 Lab Sample ID: 890-3586-5

Date Collected: 12/06/22 13:05 **Matrix: Solid**

Date Received: 12/06/22 16:00

	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	41938	12/15/22 14:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41993	12/17/22 03:38	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42242	12/19/22 16:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			41601	12/12/22 10:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41382	12/08/22 14:16	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41511	12/11/22 04:45	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 21:04	CH	EET MID

Lab Sample ID: 890-3586-6 **Client Sample ID: FS06** Date Collected: 12/06/22 13:10 **Matrix: Solid**

Date Received: 12/06/22 16:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	41938	12/15/22 14:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41993	12/17/22 03:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			42242	12/19/22 16:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			41601	12/12/22 10:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41383	12/08/22 14:20	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41511	12/10/22 18:35	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	41257	12/07/22 10:36	KS	EET MID
Soluble	Analysis	300.0		1			41535	12/11/22 21:09	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: 890-3586-1
Project/Site: Redhead Fed Com 1H SDG: 03D2024104

Laboratory: Eurofins Midland

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

Authority		rogram	Identification Number	Expiration Date
Texas	NI	ELAP	T104704400-22-25	06-30-23
The following englyte	are included in this rem	art but the laboratory is r	and portified by the governing outhority	This list was circled a small tas fam.
	•	ort, but the laboratory is r	not certified by the governing authority.	inis list may include analytes for
the agency does not o	offer certification.	•	, , ,	This list may include analytes for
	•	Matrix	Analyte	I his list may include analytes for the state of the stat
the agency does not o	offer certification.	•	, , ,	This list may include analytes for

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Method Summary

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1 SDG: 03D2024104

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

Eurofins Carlsbad

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Sample Summary

Client: Ensolum

Project/Site: Redhead Fed Com 1H

Job ID: 890-3586-1

SDG: 03D2024104

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3586-1	SW05	Solid	12/06/22 11:40	12/06/22 16:00	0 - 4
890-3586-2	FS02	Solid	12/06/22 12:15	12/06/22 16:00	4
890-3586-3	FS03	Solid	12/06/22 12:10	12/06/22 16:00	4
890-3586-4	FS04	Solid	12/06/22 13:00	12/06/22 16:00	4
890-3586-5	FS05	Solid	12/06/22 13:05	12/06/22 16:00	4
890-3586-6	FS06	Solid	12/06/22 13:10	12/06/22 16:00	4

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		Xe	Xenco		-/	공 만	Paso, TX	(915) 585- 575) 392-7	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	ock, TX (80) ad, NM (57)	5) 794-1296 5) 988-3199							
1														- N	www.xenco.com	o.com	Page	l of l
77	Project Manager:	Josh Adams				Bill to: (if different)	ent)	Kalei Jennings	nings						Work (Work Order Comments	mments	
$\overline{\Box}$		Ensolum, LLC				Company Name:	me:	Ensolum, LLC	LLC				Program:	UST/PST	PRP	Brownfi	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐	RC Superfund
~ 1		601 N Marienfeld St Suite 400	d St Su	ite 400		Address:		601 N Ma	601 N Marienfeld St Suite 400	t Suite 400			State of Project:	roject:				
	e ZIP:	Midland, TX 79701	701			City, State ZIP:		Midland,	Midland, TX 79701				Reporting	Level II]Level III	PSTA	Reporting: Level II 🗍 Level III 📗 PST/UST 📗 TRRP 📗	RRP Level IV
7		303-517-8437			Email:	Email: kjennings@ensolum.com,	ensolum		jadams@ensolum.com	solum.co	B		Deliverables: EDD	es: EDD		ADaPT 🗆		Other:
777	Project Name:	Renhead Foo	1600 ps	HILM	Turr	Turn Around					ANALY	SIS REQUEST	UEST				Prese	Preservative Codes
77 1	Project Number:	0502024	R		☑ Routine	Rush	Code									7	None: NO	DI Water: H ₂ O
7.		32,210278	201-	TRESOD	Due Date:											0	Cool: Cool	MeOH: Me
7 (0	Sampler's Name:	Julianna Falcomata	Falcon	nata	TAT starts th	TAT starts the day received by the lab, if received by 4:30pm	_				-						H.SO.: H.	NaOH: Na
0 -	SAMPI E RECEIPT	Temp Blank:	ank:	Yes No	Wet Ice:	(Yes) No	eter	0)								T	H ₃ PO ₄ : HP	
(n)	Samples Received Intact:	1		Thermometer ID:	er ID:	20 1	ıran	300.								Z	NaHSO ₄ : NABIS	ABIS
	Cooler Custody Seals:	Yes No		Correction Factor:	actor:	600	Ľ	PA:								Z	Na ₂ S ₂ O ₃ : NaSO ₃	aSO ₃
1100	Sample Custody Seals:	s: Yes No	NA	Temperature Reading:	Reading:	900		ť	+-		890-3586	3586 Chai	Chain of Custody	dy	-		n Acetate+	An Acetate+NaOH: Zn
11	Sample Identification	lification	Matrix	Date Time	Time	Depth Grab/	b/ # of	HLORI	PH (80 TEX (8								Samp	Sample Comments
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1	1203		CŊ	12-622	1210	4' 0	-	<	7									
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1	7505		S	126-22	1305	4. 0	-	V)										
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	Circle Method(s) and Metal(s) to be analyzed	id Metal(s) to be	analyz	red	TCLP / S	TCLP / SPLP 6010: 8RCRA	11	Sb As Ba	Ba Be Cd	d Cr Co	Cr Co Cu Pb N	Mn Mo Ni Se Ag		I C	Нд:	1631 / 24	Hg: 1631 / 245.1 / 7470	70 / 7471
0 -	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 such assigns a subcontrol of the control of the	ocument and relingu	ishment or or the cos	of samples control samples are	stitutes a valid nd shall not ass	purchase order fr ume any respons	rom client c sibility for a ach sample	ompany to ny losses o submitted	Eurofins Xen	nco, its affilia ncurred by th	_ = 81	ontractors. I in losses are hese terms v	ontractors. It assigns standard terms and conditions in the control in the contro	ndard terms motances by ed unless pr	s and condit eyond the co	ions ontrol ootiated.		
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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3586-1

SDG Number: 03D2024104

Login Number: 3586 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	

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Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3586-1

SDG Number: 03D2024104

Login Number: 3586
List Source: Eurofins Midland
List Number: 2
List Creation: 12/08/22 11:44 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 <6mm (1/4").	N/A	

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Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Josh Adams Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701

Generated 1/12/2023 4:02:51 PM

JOB DESCRIPTION

Redhead 31 fed SDG NUMBER Lea County NM

JOB NUMBER

890-3785-1

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 1/12/2023 4:02:51 PM

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

Client: Ensolum

Project/Site: Redhead 31 fed

Laboratory Job ID: 890-3785-1

SDG: Lea County NM

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Definitions/Glossary

Job ID: 890-3785-1 Client: Ensolum Project/Site: Redhead 31 fed SDG: Lea County NM

Qualifiers

GC VOA

Qualifier **Qualifier Description**

Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier Qualifier Description

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

HPLC/IC

Qualifier **Qualifier Description**

F1 MS and/or MSD recovery exceeds control limits.

F2 MS/MSD RPD exceeds control limits

U Indicates the analyte was analyzed for but not detected.

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: 890-3785-1 Project/Site: Redhead 31 fed SDG: Lea County NM

Job ID: 890-3785-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3785-1

Receipt

The sample was received on 1/10/2023 9:05 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SW05A (890-3785-1).

GC VOA

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

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-43699 and analytical batch 880-43692 was outside the upper control limits.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-43716 and analytical batch 880-43752 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Matrix: Solid

Lab Sample ID: 890-3785-1

Client Sample Results

Client: Ensolum

Project/Site: Redhead 31 fed

SDG: Lea County NM

Client Sample ID: SW05A

Date Collected: 01/09/23 15:05 Date Received: 01/10/23 09:05

Sample Depth: 0 - 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		01/10/23 15:19	01/11/23 12:26	
Toluene	<0.00199	U	0.00199	mg/Kg		01/10/23 15:19	01/11/23 12:26	•
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		01/10/23 15:19	01/11/23 12:26	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/10/23 15:19	01/11/23 12:26	
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/10/23 15:19	01/11/23 12:26	•
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/10/23 15:19	01/11/23 12:26	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	102		70 - 130			01/10/23 15:19	01/11/23 12:26	
1,4-Difluorobenzene (Surr)	91		70 - 130			01/10/23 15:19	01/11/23 12:26	1
- Method: TAL SOP Total BTEX - T	otal BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			01/11/23 13:19	•
Method: SW846 8015 NM - Diese Analyte		ics (DRO) (Qualifier	GC)	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			01/11/23 17:26	
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 08:24	01/11/23 13:54	
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/11/23 08:24	01/11/23 13:54	,
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/11/23 08:24	01/11/23 13:54	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	109		70 - 130			01/11/23 08:24	01/11/23 13:54	
o-Terphenyl	103		70 - 130			01/11/23 08:24	01/11/23 13:54	
•								
Method: MCAWW 300.0 - Anions	, Ion Chromato	ography - So	oluble					
Method: MCAWW 300.0 - Anions Analyte		ography - So Qualifier	oluble RL	Unit	D	Prepared	Analyzed	Dil Fac

Surrogate Summary

Client: Ensolum

Job ID: 890-3785-1

Project/Site: Redhead 31 fed

SDG: Lea County NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3776-A-1-C MS	Matrix Spike	99	98	
890-3776-A-1-D MSD	Matrix Spike Duplicate	91	101	
890-3785-1	SW05A	102	91	
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-Bromofluorobe	nzene (Surr)			
DFBZ = 1.4-Difluoroben	zene (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)
890-3772-A-1-F MS	Matrix Spike	104	96
890-3772-A-1-G MSD	Matrix Spike Duplicate	107	98
890-3785-1	SW05A	109	103
LCS 880-43699/2-A	Lab Control Sample	105	100
LCSD 880-43699/3-A	Lab Control Sample Dup	120	109
MB 880-43699/1-A	Method Blank	164 S1+	153 S1+
Surrogate Legend			

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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Client: Ensolum Project/Site: Redhead 31 fed

Job ID: 890-3785-1 SDG: Lea County NM

Method: 8021B - Volatile Organic Compounds (GC)

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

Matrix: Solid

Analysis Batch: 43697

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 43675

	MB	MB						
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

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Surrogate	%Recovery	Qualifier	Limits	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 Lab Sample ID: LCS 880-43675/1-A

Matrix: Solid

Analysis Batch: 43697

Prep Type: Total/NA

Prep Batch: 43675

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

LCS LCS

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

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

Matrix: Solid

Analysis Batch: 43697

Client Sample ID: Lab Control Sample Dup

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-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

Client: Ensolum Job ID: 890-3785-1 Project/Site: Redhead 31 fed SDG: Lea County NM

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

Lab Sample ID: 890-3776-A-1-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

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

Surrogate	%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

Analysis Batch: 43697

Prep Type: Total/NA

Prep Batch: 43675

Prep Batch: 43675

Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier RPD Limit Analyte %Rec Limits Unit 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 0.202 70 - 130 35 m-Xylene & p-Xylene <0.00396 U 0.1595 mg/Kg 79 <0.00198 U 0.101 0.08869 88 70 - 130 o-Xylene mg/Kg

MSD MSD

MB MB

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 880-43699/1-A Client Sample ID: Method Blank **Matrix: Solid**

Analysis Batch: 43692

Prep Type: Total/NA Prep Batch: 43699

Result Qualifier RL Unit D Prepared Analyzed Dil Fac Analyte Gasoline Range Organics 01/11/23 08:04 01/11/23 08:18 <50.0 U 50.0 mg/Kg (GRO)-C6-C10 01/11/23 08:04 01/11/23 08:18 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 01/11/23 08:04 01/11/23 08:18 mg/Kg

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	164	S1+	70 - 130	01/11/23 08:04	01/11/23 08:18	1
o-Terphenyl	153	S1+	70 - 130	01/11/23 08:04	01/11/23 08:18	1

Lab Sample ID: LCS 880-43699/2-A **Client Sample ID: Lab Control Sample**

Matrix: Solid

Analysis Batch: 43692							Prep E	Batch: 43699
	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	923.6		mg/Kg		92	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	908.1		mg/Kg		91	70 - 130	
C10-C28)								

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Prep Type: Total/NA

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Job ID: 890-3785-1

Client: Ensolum Project/Site: Redhead 31 fed SDG: Lea County NM

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

Lab Sample ID: LCS 880-43699/2-A Client Sample ID: Lab Control Sample

Matrix: Solid

Analysis Batch: 43692

Prep Type: Total/NA

Prep Batch: 43699

LCS LCS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 105 70 - 130 o-Terphenyl 100 70 - 130

Lab Sample ID: LCSD 880-43699/3-A Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 43692

Prep Type: Total/NA

Prep Batch: 43699

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 988.6 99 70 - 1307 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 999.2 100 mg/Kg 70 - 13010 20 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 120 70 - 130 1-Chlorooctane 109 70 - 130 o-Terphenyl

Lab Sample ID: 890-3772-A-1-F MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 43692

Prep Type: Total/NA

Prep Batch: 43699

Sample Sample MS MS Spike Analyte Added Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.9 U 998 1094 mg/Kg 110 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 1047 mg/Kg 105 70 - 130

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 104 o-Terphenyl 96 70 - 130

Lab Sample ID: 890-3772-A-1-G MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Analysis Batch: 43692

Prep Type: Total/NA

Prep Batch: 43699

Sample Sample MSD MSD RPD Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit U 997 1002 Gasoline Range Organics <49.9 mg/Kg 101 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 997 1085 mg/Kg 109 70 - 130 20

C10-C28)

MSD MSD

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	107	70 - 130
o-Terphenyl	98	70 - 130

QC Sample Results

Client: Ensolum Job ID: 890-3785-1 Project/Site: Redhead 31 fed SDG: Lea County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-43716/1-A

Matrix: Solid

Analysis Batch: 43752

Client Sample ID: Method Blank **Prep Type: Soluble**

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Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 01/12/23 07:44

Lab Sample ID: LCS 880-43716/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 43752

Spike LCS LCS %Rec Added %Rec Analyte Result Qualifier Unit D Limits Chloride 250 226.9 mg/Kg 91 90 - 110

Lab Sample ID: LCSD 880-43716/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 43752

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 248.7 mg/Kg 90 - 110

Lab Sample ID: 880-23565-A-1-F MS Client Sample ID: Matrix Spike **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 43752

Spike MS MS Sample Sample %Rec Analyte Result Qualifier Added Result Qualifier %Rec Unit Limits Chloride 137 F1 F2 251 419.4 F1 112 90 - 110 mg/Kg

Lab Sample ID: 880-23565-A-1-G MSD

Matrix: Solid

Analysis Batch: 43752

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 137 F1 F2 251 338.0 F1 F2 mg/Kg 80 90 - 110 22 20

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Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

QC Association Summary

Client: Ensolum

Project/Site: Redhead 31 fed

Job ID: 890-3785-1 SDG: Lea County NM

GC VOA

Prep Batch: 43675

Lab Sample ID 890-3785-1	Client Sample ID SW05A	Prep Type Total/NA	Matrix Solid	Method 5035	Prep Batch
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
890-3785-1	SW05A	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: 43742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3785-1	SW05A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 43692

Lab Sample ID 890-3785-1	Client Sample ID SW05A	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 43699
MB 880-43699/1-A	Method Blank	Total/NA	Solid	8015B NM	43699
LCS 880-43699/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	43699
LCSD 880-43699/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	43699
890-3772-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	43699
890-3772-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	43699

Prep Batch: 43699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3785-1	SW05A	Total/NA	Solid	8015NM Prep	
MB 880-43699/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-43699/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-43699/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3772-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3772-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 43773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3785-1	SW05A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 43716

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3785-1	SW05A	Soluble	Solid	DI Leach	
MB 880-43716/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-43716/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-43716/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum

Project/Site: Redhead 31 fed

Job ID: 890-3785-1

SDG: Lea County NM

HPLC/IC (Continued)

Leach Batch: 43716 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-23565-A-1-F MS	Matrix Spike	Soluble	Solid	DI Leach	
880-23565-A-1-G MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 43752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3785-1	SW05A	Soluble	Solid	300.0	43716
MB 880-43716/1-A	Method Blank	Soluble	Solid	300.0	43716
LCS 880-43716/2-A	Lab Control Sample	Soluble	Solid	300.0	43716
LCSD 880-43716/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	43716
880-23565-A-1-F MS	Matrix Spike	Soluble	Solid	300.0	43716
880-23565-A-1-G MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	43716

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Lab Chronicle

Client: Ensolum Job ID: 890-3785-1
Project/Site: Redhead 31 fed SDG: Lea County NM

Client Sample ID: SW05A

Lab Sample ID: 890-3785-1

Matrix: Solid

Date Collected: 01/09/23 15:05 Date Received: 01/10/23 09:05

	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	43675	01/10/23 15:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	43697	01/11/23 12:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			43742	01/11/23 13:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			43773	01/11/23 17:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	43699	01/11/23 08:24	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	43692	01/11/23 13:54	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	43716	01/11/23 09:58	KS	EET MID
Soluble	Analysis	300.0		1			43752	01/12/23 10:21	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

Project/Site: Redhead 31 fed

Job ID: 890-3785-1

SDG: Lea County NM

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	Prep Method	Matrix	Analyte	
0 ,		Matrix Solid	Analyte Total TPH	

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Method Description

Total BTEX Calculation

Microextraction

Volatile Organic Compounds (GC)

Diesel Range Organics (DRO) (GC)

Diesel Range Organics (DRO) (GC)

Deionized Water Leaching Procedure

Anions, Ion Chromatography

Closed System Purge and Trap

Method Summary

Client: Ensolum

Method

8021B

Total BTEX

8015 NM

8015B NM

8015NM Prep

DI Leach

300.0

5035

Project/Site: Redhead 31 fed

Job ID: 890-3785-1

SDG: Lea County NM

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

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: Redhead 31 fed

Job ID: 890-3785-1 SDG: Lea County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3785-1	SW05A	Solid	01/09/23 15:05	01/10/23 09:05	0 - 4

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Chain of Custody

• eurofins	TINS Environment Testing Xenco		Houston, TX (281) 240-4200. Dallas, TX (214) 902-0300 Midland. TX (432) 704-5440, San Antonio. TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 992-7550, Carlsbad, NM (575) 988-3199	(214) 902-0300 *X (210) 509-3334 ((806) 794-1296 I (575) 988-3199	1	P 2 1/2
			305, NR (373) 332-7330, Calisada, Ini	((1)) 300-0130	www.xenco.com Page	2 of 1
Project Manager:	Josh Adams	Bill to: (if different)	rent) Kalei Jennings		Work Order Comments	
Company Name:	Ensolum, LLC	Company Name:		Program: UST	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	C Superfund
Address:	601 N Marienfeld St Suite 400	Address:	601 N Marienfeld St Suite 400	400 State of Project:	ct:]
le ZIP:	Midland, TX 79701	City, State ZIP:			Reporting: Level II Level III PST/UST TRRP	RP Level IV
	817.683.2503	Email: kjennings@ensolum.com	ensolum.com	Deliverables: EDD	EDD ADaPT Other:	ler:
Project Name:	RedHead 31 Fed	Turn Around		ANALYSIS REQUEST	Preser	Preservative Codes
Project Number:	03D2024104	☐ Routine ☑ Rush	Code		None: NO	DI Water: H ₂ O
Project Location:	Lea County, NM	Due Date: 24 HR			Coal: Coal	MeOH: Me
Sampler's Name:	Conner Shore	TAT starts the day received by	by		HCL: HC	HNO ₃ : HN
PO#)	the lab, if received by 4:30pm	_		H ₂ SU ₄ : H ₂	NaOH: Na
SAMPLE RECEIPT	Temp Blank: (es No	o Wet ice: Wes No	mete		H₃PO₄: HP	
Samples Received Intact:	Yes No Th	neter ID: TN/N60	1		NaHSO ₄ : NABIS	
Cooler Custody Seals:	Yes No NA Correction Factor:	n Factor:	Pr	890-3785 Chain of Custody	Na ₂ S ₂ O ₃ : NaSO ₃	
Sample Custody Seals:	Yes No (N/A)	00			NaOH+Ascorbic Acid:	SAPC
Sample Identification	Matrix	Date Time Depth Grab/	PH (80		Sampl	Sample Comments
SW05A	S	1505 0-4	-1 ×			
			 			
		200	+			napp2230442646
	1, 9.					
Total 200.7 / 6010 Circle Method(s) and I	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	8RCRA 13PPM Texas 11 TCLP / SPLP 6010: 8R(Al Sb As Ba Be B Cd	Ca Cr Co Cu Fe Pb Mg Mn Mo Ni 3r Co Cu Pb Mn Mo Ni Se Ag Tl U	\i K Se Ag SiO ₂ Na Sr Tl Sn U V Zn U Hg: 1631 / 245.1 / 7470 / 7471	U V Zn 0 /7471
Notice: Signature of this o	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcont of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such in	s and shall not assume any respon	rom client company to Eurofins Xenco, its	affiliates and subcontractors. It assigns standard terms and conditions by the client if such losses are due to circumstances beyond the contro	d terms and conditions inces beyond the control	
of Eurofins Xenco. A mini	mum charge of \$85.00 will be applied to ea	ach project and a charge of \$5 for e	ach sample submitted to Eurofins Xenco,	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	niess previously negotiated.	
Relinquished by: (Signature)	(Signature) / / Recei	Received by: (Signature)	Date/Time Re	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
J CS	(lat	S	1-10-239052			
3			4			
0			c		Revised	Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3785-1

SDG Number: Lea County NM

List Source: Eurofins Carlsbad

Login Number: 3785 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	

Creator: Teel, Brianna

Login Sample Receipt Checklist

Client: Ensolum Job Number: 890-3785-1 SDG Number: Lea County NM

Login Number: 3785 List Source: Eurofins Midland List Number: 2 List Creation: 01/11/23 11:43 AM

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

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APPENDIX E

NMOCD Notifications

From: Enviro, OCD, EMNRD

To: Kalei Jennings

Cc: <u>Bratcher, Michael, EMNRD; Nobui, Jennifer, EMNRD</u>

Subject: RE: [EXTERNAL] ConocoPhillips Company- Sampling Notification (Week of 11/28/2022)

Date: Wednesday, November 23, 2022 2:33:38 PM

Attachments: <u>image005.jpg</u>

image006.png image007.png image008.png image009.png

[**EXTERNAL EMAIL**]

Please be aware that notification requirements are **two business days**, per rule. Please proceed on your schedule. Also, please include this, and all correspondence, in the closure report to insure inclusion in the project file.

Many thanks and happy holidays.

Jocelyn Harimon • Environmental Specialist

Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov

http://www.emnrd.nm.gov



From: Kalei Jennings < kjennings@ensolum.com> **Sent:** Wednesday, November 23, 2022 1:12 PM

To: Enviro, OCD, EMNRD < OCD. Enviro@emnrd.nm.gov>

Subject: [EXTERNAL] ConocoPhillips Company- Sampling Notification (Week of 11/28/2022)

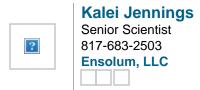
CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

On behalf of ConocoPhillips Company, we respectfully submit notification of sampling to be conducted at the below locations the week of 11/28/2022.

Redhead 31 Fed Com 1H / Incident Number NAPP2230442646
Bandit 15 Federal Com #2 / Incident Number NAPP2231139799
Triste Draw 5 Fed 2H SWD / Incident Number NAPP2229033410
James A Waterflood / Incident Numbers NAB1912758567 and NAB1912759510

Thank you,



From: <u>Kalei Jennings</u>
To: <u>Josh Adams</u>

Subject: FW: ConocoPhillips Company- Sampling Notification (Week of 12/05/2022)

Date: Monday, January 16, 2023 7:15:24 PM

Attachments: image001.png

image002.png image003.png image004.png



Kalei Jennings

Senior Scientist 817-683-2503 Ensolum, LLC

From: Kalei Jennings

Sent: Thursday, December 1, 2022 5:01 PM

To: ocd.enviro@emnrd.nm.gov

Subject: ConocoPhillips Company- Sampling Notification (Week of 12/05/2022)

All,

On behalf of ConocoPhillips Company, we respectfully submit notification of sampling to be conducted at the below locations the week of 12/05/2022.

Redhead 31 Federal Com 1H/ NAPP2230442646

Bandit 15 Federal COM #2/ NAPP2231139799

Dominator O Flowline / napp2230729294

James A Waterflood / Incident Numbers NAB1912758567 and NAB1912759510

Thank you,



Kalei Jennings

Senior Scientist 817-683-2503 Ensolum, LLC

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 182469

CONDITIONS

Operator:	OGRID:		
COG OPERATING LLC	229137		
600 W Illinois Ave	Action Number:		
Midland, TX 79701	182469		
	Action Type:		
	[C-141] Release Corrective Action (C-141)		

CONDITIONS

Created By		Condition Date
jnobui	Closure Report Approved.	2/21/2023