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	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

# **Release Notification**

### **Responsible Party**

Responsible Party: WPX Energy/ RKI	OGRID: <b>246289</b>
Contact Name: Jim Raley	Contact Telephone: <b>575-689-7597</b>
Contact email: james.raley@wpxenergy.com	Incident # (assigned by OCD) NMAP1826970471
Contact mailing address: 5315 Buena Vista Dr., Carlsbad, NM 88220	

#### **Location of Release Source**

Latitude: 32.0069847 Longitude: -103.9574661

(NAD 83 in decimal degrees to 5 decimal places)

Site Type: Oil

Volume Recovered (bbls)

Volume Recovered (Mcf)

Volume/Weight Recovered (provide units)

Date Release Discovered: 9/17/2018			API#: <b>30-0</b>	15-25020					
Unit Letter	Section	Township	Range		Count	у	]		
N	26	26S	29E	Eddy					
			Nature an	d Vol	ume of R	Release			
	Materia	ıl(s) Released (Select	all that apply and attac	ch calculat	ions or specific j	ustification for the	volumes provided b	pelow)	
Crude Oi	1	Volume Releas	sed (bbls) 3			Volume Reco	overed (bbls) 0		
Produced	Water	Volume Releas	Volume Released (bbls) 5			Volume Reco	overed (bbls) 0		
		Is the concentra	ation of dissolved	chloride	in the	⊠ Yes □ N	lo		

# Cause of Release

Condensate

Natural Gas

Other (describe)

Site Name: EP USA #005

Interior corrosion on 1" nipple located on wellhead allowed small hole to develop. This allowed fluids to escape to pad surface. Small area off pad was also impacted approx 50' on east side of well pad. BLM permission granted to excavate impacted area off-site.

produced water >10,000 mg/l?

Volume/Weight Released (provide units)

Volume Released (bbls)

Volume Released (Mcf)

Page 230f.128

Incident ID	NMAP1826970471
District RP	2RP-4984
Facility ID	N/A
Application ID	pMAP1826970173

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
☐ Yes ⊠ No	
If YES, was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
	Initial Response
The responsible p	party must undertake the following actions immediately 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 and the environment.
Released materials ha	we been contained via the use of berms or dikes, absorbent pads, or other containment devices.
	ecoverable materials have been removed and managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NM	AC the responsible party may commence remediation immediately after discovery of a release. If remediation
has begun, please attach	a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and
	required to report and/or file certain release notifications and perform corrective actions for releases which may endanger nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have
failed to adequately investig	ate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In
addition, OCD acceptance of and/or regulations.	f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
Printed Name: Jim Raley	Title: Environmental Specialist
/ _	
In King	
Signature:	Date: 9/25/2018
email: james.raley@wpxe	relephone: 575-689-7597
OCD Owler	
OCD Only	MMC 00/26/18
Received by:	Date: 09/26/18

Oil Conservation Division

	Page 3 of 128
Incident ID:	NMAP1826970471
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?	51-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes 🛛 No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	X Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	X Yes ☐ No
Attach a comprehensive report (electronic submittals in .ndf format are preferred) demonstrating the lateral and war	tical automs of soil

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.

containment absorbated with the release have even determined. Refer to 17/11/12/11/17/11/12 for specimes.
Characterization Report Checklist: Each of the following items must be included in the report.
<ul> <li>Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.</li> <li>Field data</li> <li>Data table of soil contaminant concentration data</li> </ul>
Depth to water determination
Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
<ul> <li>☒ Boring or excavation logs</li> <li>☒ Photographs including date and GIS information</li> </ul>
Photographs including date and GIS information  Topographic/Aerial maps
☐ Laboratory data including chain of custody

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

Received by OCD: 3/14/2023 2:09:41 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

Incident ID: NMAP1826970471
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: Jim Raley Title: Environmental Professional

Signature: Date: 3/14/2023

email: jim.raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: Jocelyn Harimon Date: \_\_03/14/2023

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Incident ID: NMAP1826970471
District RP
Facility ID
Application ID

# Closure

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

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

A scaled site and sampling diagram as described in 19.15.29.1	1 NMAC
Photographs of the remediated site prior to backfill or photos must be notified 2 days prior to liner inspection)	of the liner integrity if applicable (Note: appropriate OCD District office
☐ Laboratory analyses of final sampling (Note: appropriate ODC	C District office must be notified 2 days prior to final sampling)
□ Description of remediation activities	
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of should their operations have failed to adequately investigate and rer human health or the environment. In addition, OCD acceptance of compliance with any other federal, state, or local laws and/or regular restore, reclaim, and re-vegetate the impacted surface area to the coaccordance with 19.15.29.13 NMAC including notification to the O	ntions. The responsible party acknowledges they must substantially nditions that existed prior to the release or their final land use in
Printed Name: Jim Raley	Title: Environmental Professional
Signature:	Date:
email: _jim.raley@dvn.com	Telephone: 575-689-7597
OCD Only  Received by: Jocelyn Harimon	Date:03/14/2023
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible or regulations.
Closure Approved by:	Date: 03/21/2023
Printed Name: Jennifer Nobui	Title: _Environmental Specialist A



## **CLOSURE REQUEST REPORT**

Site Location:

EP USA #005 Eddy County, New Mexico Incident Number NMAP1826970471

March 14, 2023 Ensolum Project No. 03A1987013

Prepared for:

WPX Energy Permian, LLC 5315 Buena Vista Dr. Carlsbad, NM 88220 Attention: Jim Raley

Prepared by:

Erick Herrera Staff Geologist

Eriel #

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

Principal

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**Appendix D:** Laboratory Analytical Reports & Chain-of-Custody Documentation

**Appendix E:** Email Correspondence

Appendix B: Photographic Log

Page 1

March 14, 2023

#### 1.0 INTRODUCTION

Ensolum, LLC (Ensolum) has prepared this Closure Request Report (CRR) to document remedial actions performed by WPX Energy Permian, LLC (WPX) at the EP USA #005 (hereinafter referred to as the "Site") in Unit N, Section 26, Township 26 South, Range 29 East, in Eddy County, New Mexico. Additional remediation was conducted as outlined in the Remediation Work Plan Addendum (RWPA), which was approved by the New Mexico Oil Conservation Division (NMOCD) on September 19, 2022. Based on the completed remedial actions and results of subsequent soil sampling events to address the release of crude oil and produced water at the Site, WPX respectfully requests No Further Action (NFA) for Incident Number NMAP1826970471. All previous remediation activities and soil sample analytical results can be referenced in the original RWPA and other submitted deliverable documents to the NMOCD.

#### 1.1 Site Description & Release Background

The Site is located within Eddy County, New Mexico (32.0069847°N, 103.9574661° W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land (Figure 1 in Appendix A).

On September 17, 2018, interior corrosion on a 1-inch nipple located on a wellhead allowed a small hole to develop and release approximately 3 barrels (bbls) of crude oil and 5 bbls of produced water to the well pad and adjacent pasture. No free-standing fluids were recovered. WPX reported the release to the NMOCD with a Corrective Action Form C-141 (Form C-141) on September 25, 2018 and was subsequently assigned Incident Number NMAP1826970471.

#### 1.2 Site Characterization

The RWPA assigned the site characterization according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Based on the review of nearby Site receptors and depth to groundwater determination at the Site, the following Closure Criteria for constituents of concern (COCs) were applied:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbon (TPH): 100 mg/kg
- Chloride: 600 mg/kg

#### 2.0 REMEDIATION ACTIONS

#### 2.1 Excavation Activities

From January 16 to January 30, 2023, Ensolum oversaw excavation activities to remove remaining impacted soil associated with the subject release in the top four feet via mechanical heavy equipment. Excavation activites were directed by field sceening soil for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Photographic documentation was conducted during excavation activities and is included in **Appendix B**.

Following removal of impacted soil, Ensolum collected 5-point composite excavation confirmation soil samples at the approved frequency of 500 square feet from the sidewalls of the excavation. The composite 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. Confirmation soil samples SW04 through SW07 were collected from the sidewalls of the excavation at depths ranging from the ground surface to approximately 4 feet bgs. All previous and current confirmation soil sample locations and the final excavation extent are depicted on **Figure 2** in **Appendix A**.

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 and chilled under strict chain-of-custody procedures, to Eurofins LLC (Eurofins) in Carlsbad, New Mexico, for analysis of: BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH following EPA Method 8015M/D; and chloride following EPA Method 300.0.

On February 3, 2023, a 20-mil impermeable liner was placed into the excavation floor at approximately 4 feet bgs. Immediately following the liner installation, the excavation was backfilled with clean, non-waste containing soil and restored to "as close to its original state" as possible. Photographic documentation of the liner installation is included in **Appendix B**. The approximate liner extent is provided on **Figure 2** in **Appendix A**.

#### 2.2 Waste Handling

An additional 986 cubic yards of impacted soil were excavated under WPX-approved manifests from continued remedial actions. The excavated impacted soil was transported to a R360 Environmental Solutions facility in Orla, Texas in accordance with state and federal regulations.

#### 3.0 SOIL SAMPLING RESULTS

All final confirmation soil sample laboratory analytical results indicated concentrations of COCs were below the Closure Criteria. Laboratory analytical results are summarized on **Table 1** in **Appendix C**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix D**. **Appendix E** provides extension and sampling correspondence email notification receipts associated with the release.

#### 4.0 FINDINGS AND CONCLUSIONS

The primary objectives of Ensolum's scope of services were to document response actions performed at the Site were completed in accordance with the approved RWPA and applicable NMOCD regulatory guidelines. Based on the results documented in this report, the following findings and conclusions regarding the Site are presented:

- An additional 986 cubic yards of impacted soil were excavated under WPX-approved manifests from continued remedial actions and removed from the Site for disposal in accordance with state and federal regulations;
- All final confirmation soil sample laboratory analytical results indicated concentrations of COCs were below the Closure Criteria;
- Based on current laboratory data and delineation soil sample depths, it is estimated that
  the release area contains 1,698 cubic yards of residual chloride impacts greater than the
  applicable Closure Criteria below the top four feet; and
- A 20-mil impermeable liner was installed at a depth approximately 4 feet bgs on the floor of the final excavation extent in order to act as a physical barrier and mitigate further



migration of residual chloride impacts into the subsurface. The excavation was backfilled with clean, imported soil and restored to "as close to its original state" as possible.

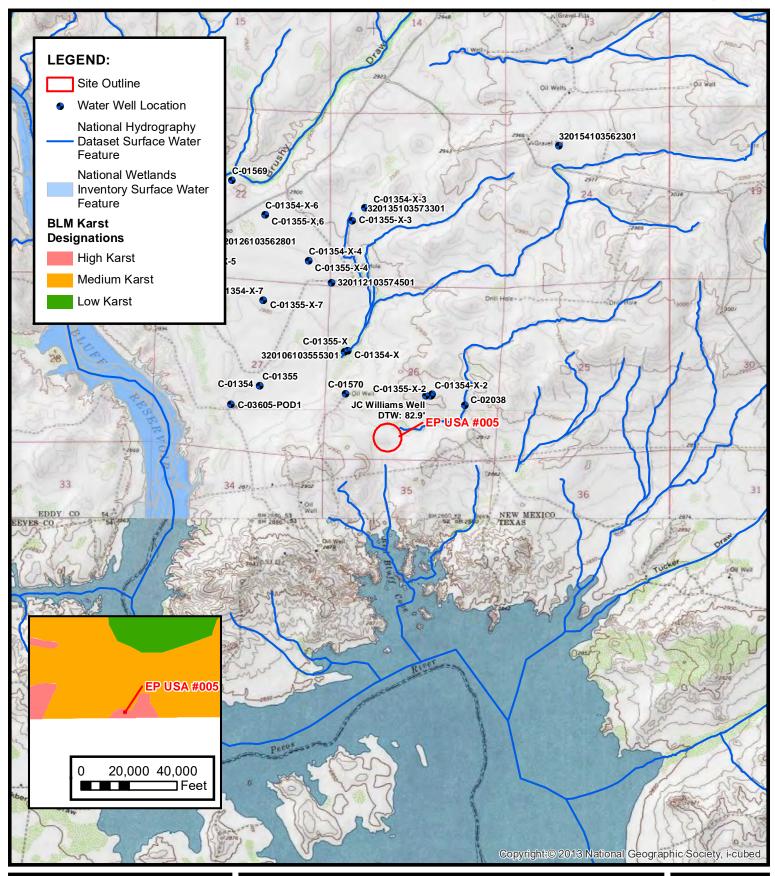
Based on the conclusions presented, WPX believes the activities described above have met the requirements set forth in NMAC 19.15.29.13 to be protective of human health, the environment, and groundwater. As such, WPX respectfully requests approval of this CRR from NMOCD.





**APPENDIX A** 

**Figures** 

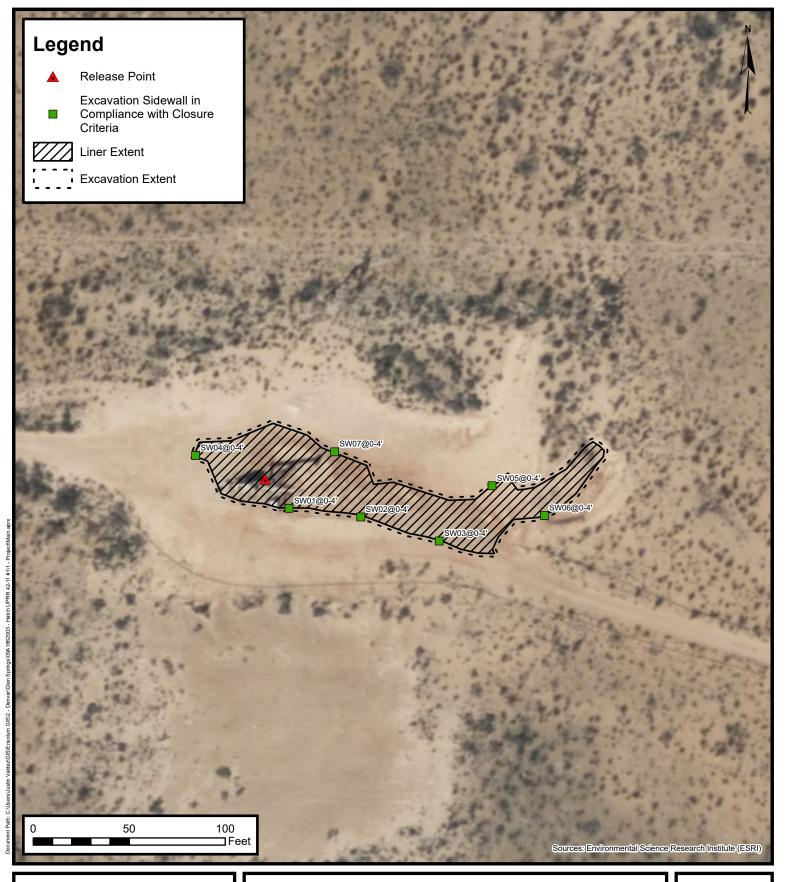




# SITE MAP

EP USA #005 WPX Energy Permian, LLC Unit N, Section 26, Township 26S, Range 29E Eddy County, New Mexico FIGURE

1





# **Excavation Soil Sample Locations**

EP USA #005

WPX Energy Permian, LLC Unit N, Section 26, Township 26S, Range 29E Eddy County, New Mexico **FIGURE** 

2



**APPENDIX B** 

Photographic Log

# **ENSOLUM**

#### Photographic Log

WPX Energy Permian, LLC EP USA #005

Incident Number: NMAP1826970471





Photograph 1 Date: 01/16/2023

Description: Excavation activities.

View: Northeast

Photograph 2 Date: 01/17/2023

Description: Excavation activities.

View: Northeast





Photograph 3 Date: 02/03/2023

Description: Liner installation activities.

View: Northeast

Photograph 4 Date: 03/01/2023

Description: Backfilled excavation with liner.

View: Northeast



# **APPENDIX C**

**Tables** 



#### TABLE I SOIL SAMPLE ANALYTICAL RESULTS WPX Energy Permian, LLC - EP USA #005 Eddy County, New Mexico

#### Ensolum Project No. 03A1987013

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I C	Closure Criteria	(NMAC 19.15.29)	10	50	NE	NE	NE	100	600
	Excavation Soil Sample Analytical Results								
SW01	06/17/2022	0 - 4	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	333
SW02	06/17/2022	0 - 4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	403
SW03	06/17/2022	0 - 4	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	372
SW04	01/17/2023	0 - 4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	391
SW05	01/17/2023	0 - 4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	93.9
SW06	01/30/2023	0 - 4	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	236
SW07	01/17/2023	0 - 4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	347

#### Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Ensolum 1 of 1



# APPENDIX D

Laboratory Analytical Reports & Chain-of-Custody Documentation



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2438-1

Laboratory Sample Delivery Group: 03A1987013

Client Project/Site: EP USA #005

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Joseph Hernandez

MRAMER

Authorized for release by 6/22/2022 5:03:40 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

Review your project results through EO L.

Have a Question?

Expert

Visit us at: www.eurofinsus.com/Env

Released to Imaging: 3/21/2023 2:21:21 PM

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.

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Client: Ensolum
Project/Site: EP USA #005
Laboratory Job ID: 890-2438-1
SDG: 03A1987013

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QC Sample Results	9
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Sample Summary	18
Chain of Custody	19
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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-2438-1 Project/Site: EP USA #005

SDG: 03A1987013

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

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

GC Semi VOA

Qualifier **Qualifier Description** 

U Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier **Qualifier Description** 

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

**Glossary** 

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

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

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

Duplicate Error Ratio (normalized absolute difference) **DER** 

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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) Minimum Detectable Concentration (Radiochemistry) MDC

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

**Practical Quantitation Limit PQL** 

**PRES** Presumptive QC **Quality Control** 

Relative Error Ratio (Radiochemistry) **RER** 

RI Reporting Limit or Requested Limit (Radiochemistry)

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

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

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: Ensolum

Project/Site: EP USA #005

Job ID: 890-2438-1

SDG: 03A1987013

Job ID: 890-2438-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2438-1

#### Receipt

The samples were received on 6/21/2022 9:06 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.6°C

#### **GC VOA**

Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-28110 and analytical batch 880-28092 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (880-16140-A-1-C). Evidence of matrix interferences is not obvious.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-28082 and analytical batch 880-28134 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.

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Job ID: 890-2438-1

Client: Ensolum Project/Site: EP USA #005 SDG: 03A1987013

**Client Sample ID: SW01** Lab Sample ID: 890-2438-1

Date Collected: 06/17/22 13:00 **Matrix: Solid** Date Received: 06/21/22 09:06

Sample Depth: 0' - 4'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/22/22 09:57	06/22/22 12:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/22/22 09:57	06/22/22 12:07	1
Ethylbenzene	< 0.00200	U	0.00200		mg/Kg		06/22/22 09:57	06/22/22 12:07	1
m-Xylene & p-Xylene	< 0.00399	U	0.00399		mg/Kg		06/22/22 09:57	06/22/22 12:07	1
o-Xylene	< 0.00200	U	0.00200		mg/Kg		06/22/22 09:57	06/22/22 12:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		06/22/22 09:57	06/22/22 12:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130				06/22/22 09:57	06/22/22 12:07	1
1,4-Difluorobenzene (Surr)	92		70 - 130				06/22/22 09:57	06/22/22 12:07	1
- Method: Total BTEX - Total B	ΓEX Calcula	tion							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			06/22/22 14:29	1
Method: 8015 NM - Diesel Rar	ngo Organic	s (DPO) (G	:C)						
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8		49.8		mg/Kg			06/22/22 17:01	1
- -									
Method: 8015B NM - Diesel R	_		• •						
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.8	U	49.8		mg/Kg		06/22/22 09:41	06/22/22 13:47	1
(GRO)-C6-C10			43.0						'
Diesel Range Organics (Over	<49.8	U	49.8		mg/Kg		06/22/22 09:41	06/22/22 13:47	·
,	<49.8 <49.8				mg/Kg mg/Kg		06/22/22 09:41 06/22/22 09:41		1
Diesel Range Organics (Over C10-C28)		U	49.8		0 0				1
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.8	U	49.8 49.8		0 0		06/22/22 09:41	06/22/22 13:47	1 1 <i>Dil Fac</i>
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<49.8 <b>%Recovery</b>	U	49.8 49.8 <b>Limits</b>		0 0		06/22/22 09:41  Prepared	06/22/22 13:47  Analyzed  06/22/22 13:47	1 1 Dil Fac
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<49.8  **Recovery  113  124	∪ <b>Qualifier</b>	49.8 49.8  Limits 70 - 130 70 - 130		0 0		06/22/22 09:41  Prepared 06/22/22 09:41	06/22/22 13:47  Analyzed  06/22/22 13:47	1 1 Dil Fac
Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<49.8  **Recovery 113 124  Chromatogra	∪ <b>Qualifier</b>	49.8 49.8  Limits 70 - 130 70 - 130	MDL	mg/Kg	D	06/22/22 09:41  Prepared 06/22/22 09:41	06/22/22 13:47  Analyzed  06/22/22 13:47	1 Dil Fac

**Client Sample ID: SW02** Lab Sample ID: 890-2438-2 Date Collected: 06/17/22 13:45 **Matrix: Solid** 

Date Received: 06/21/22 09:06

Sample Depth: 0' - 4'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:27	1
Toluene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:27	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/22/22 09:57	06/22/22 12:27	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:27	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/22/22 09:57	06/22/22 12:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				06/22/22 09:57	06/22/22 12:27	1

 Client: Ensolum
 Job ID: 890-2438-1

 Project/Site: EP USA #005
 SDG: 03A1987013

Client Sample ID: SW02 Lab Sam

Client Sample ID: SW02

Date Collected: 06/17/22 13:45

Date Received: 06/21/22 09:06

Lab Sample ID: 890-2438-2

Matrix: Solid

Sample Depth: 0' - 4'

Surrogate	%Recovery Qualifier	Limits	Prepared Analyzed	Dil Fac
1 4-Difluorobenzene (Surr)	86	70 - 130	06/22/22 09:57 06/22/22 12:27	1

#### Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00398	U	0.00398	mg/Kg			06/22/22 14:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	)	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg	 		06/22/22 17:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		06/22/22 09:41	06/22/22 14:09	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		06/22/22 09:41	06/22/22 14:09	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/22/22 09:41	06/22/22 14:09	1
Surrogate	%Recovery	Qualifier	l imits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130	06/22/22 09:41	06/22/22 14:09	1
o-Terphenyl	119		70 - 130	06/22/22 09:41	06/22/22 14:09	1

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

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	403	5.02	mg/Kg			06/22/22 15:49	1

Client Sample ID: SW03

Date Collected: 06/17/22 14:30

Lab Sample ID: 890-2438-3

Matrix: Solid

Date Collected: 06/17/22 14:30 Date Received: 06/21/22 09:06

Sample Depth: 0' - 4'

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

Michiga. OUL ID - Volutile O	igaine compo	unus (CC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:48	1
Toluene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:48	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:48	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/22/22 09:57	06/22/22 12:48	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 12:48	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/22/22 09:57	06/22/22 12:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130				06/22/22 09:57	06/22/22 12:48	1
1,4-Difluorobenzene (Surr)	89		70 - 130				06/22/22 09:57	06/22/22 12:48	1

Mothod:	Total RTEY	- Total RTFX	Calculation

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			06/22/22 14:29	1

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

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			06/22/22 17:01	1

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# **Client Sample Results**

Client: Ensolum Job ID: 890-2438-1 Project/Site: EP USA #005 SDG: 03A1987013

**Client Sample ID: SW03** Lab Sample ID: 890-2438-3 Date Collected: 06/17/22 14:30 **Matrix: Solid** Date Received: 06/21/22 09:06

Sample Depth: 0' - 4'

Analyte

Chloride

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		06/22/22 09:41	06/22/22 14:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/22/22 09:41	06/22/22 14:30	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/22/22 09:41	06/22/22 14:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130				06/22/22 09:41	06/22/22 14:30	1
o-Terphenyl	111		70 - 130				06/22/22 09:41	06/22/22 14:30	1

RL

5.05

**MDL** Unit

mg/Kg

D

Prepared

Analyzed

06/22/22 15:57

**Result Qualifier** 

372

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Dil Fac

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2438-1

 Project/Site: EP USA #005
 SDG: 03A1987013

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)				
880-16162-A-1-B MS	Matrix Spike		97				
880-16162-A-1-C MSD	Matrix Spike Duplicate	111	99				
890-2438-1	SW01	112	92				
890-2438-2	SW02	115	86				
890-2438-3	SW03	112	89				
LCS 880-28110/1-A	Lab Control Sample	110	98				
LCSD 880-28110/2-A	Lab Control Sample Dup	108	98				
MB 880-28110/5-A	Method Blank	102	90				

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)				
880-16140-A-1-D MS	Matrix Spike	100	99				
880-16140-A-1-E MSD	Matrix Spike Duplicate	99	107				
890-2438-1	SW01	113	124				
890-2438-2	SW02	107	119				
890-2438-3	SW03	104	111				
LCS 880-28102/2-A	Lab Control Sample	104	115				
LCSD 880-28102/3-A	Lab Control Sample Dup	97	109				
MB 880-28102/1-A	Method Blank	104	121				

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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Client: Ensolum Job ID: 890-2438-1 Project/Site: EP USA #005 SDG: 03A1987013

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-28110/5-A

**Matrix: Solid** 

**Analysis Batch: 28092** 

**Client Sample ID: Method Blank** 

**Prep Type: Total/NA** 

Prep Batch: 28110

	MB	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 11:24	1
Toluene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 11:24	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 11:24	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/22/22 09:57	06/22/22 11:24	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		06/22/22 09:57	06/22/22 11:24	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/22/22 09:57	06/22/22 11:24	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102	70 - 130	06/22/22 09:57	06/22/22 11:24	1
1,4-Difluorobenzene (Surr)	90	70 - 130	06/22/22 09:57	06/22/22 11:24	1

Lab Sample ID: LCS 880-28110/1-A

Matrix: Solid

**Analysis Batch: 28092** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 28110

		Spike	LCS	LCS				%Rec	
1	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ē	Benzene	0.100	0.1010		mg/Kg		101	70 - 130	
1	Toluene	0.100	0.09961		mg/Kg		100	70 - 130	
E	Ethylbenzene	0.100	0.1046		mg/Kg		105	70 - 130	
r	n-Xylene & p-Xylene	0.200	0.2149		mg/Kg		107	70 - 130	
c	p-Xylene	0.100	0.1082		mg/Kg		108	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 880-28110/2-A

**Matrix: Solid** 

**Analysis Batch: 28092** 

Client	Sample	ID: La	ib Cor	itrol S	ample Dup	)
			_			

Prep Type: Total/NA Prep Batch: 28110

Spike	LCSD LCSD			%Rec		RPD
Added	Result Qualifier	Unit	D %Rec	Limits	RPD	Limit
0.100	0.09688	mg/Kg	97	70 - 130	4	35
0.100	0.09543	mg/Kg	95	70 - 130	4	35
0.100	0.09857	mg/Kg	99	70 - 130	6	35
0.200	0.2034	mg/Kg	102	70 - 130	6	35
0.100	0.1027	mg/Kg	103	70 - 130	5	35
	Added 0.100 0.100 0.100 0.200	Added         Result         Qualifier           0.100         0.09688           0.100         0.09543           0.100         0.09857           0.200         0.2034	Added         Result         Qualifier         Unit           0.100         0.09688         mg/Kg           0.100         0.09543         mg/Kg           0.100         0.09857         mg/Kg           0.200         0.2034         mg/Kg	Added         Result         Qualifier         Unit         D         %Rec           0.100         0.09688         mg/Kg         97           0.100         0.09543         mg/Kg         95           0.100         0.09857         mg/Kg         99           0.200         0.2034         mg/Kg         102	Added         Result         Qualifier         Unit         D         %Rec         Limits           0.100         0.09688         mg/Kg         97         70 - 130           0.100         0.09543         mg/Kg         95         70 - 130           0.100         0.09857         mg/Kg         99         70 - 130           0.200         0.2034         mg/Kg         102         70 - 130	Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           0.100         0.09688         mg/Kg         97         70 - 130         4           0.100         0.09543         mg/Kg         95         70 - 130         4           0.100         0.09857         mg/Kg         99         70 - 130         6           0.200         0.2034         mg/Kg         102         70 - 130         6

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1.4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 880-16162-A-1-B MS

**Matrix: Solid** 

**Analysis Batch: 28092** 

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

Prep Batch: 28110

-	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U F1	0.100	0.06858	F1	mg/Kg		68	70 - 130	
Toluene	<0.00199	U F1	0.100	0.06739	F1	mg/Kg		67	70 - 130	

Client: Ensolum

Job ID: 890-2438-1 SDG: 03A1987013

Prep Batch: 28110

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

Lab Sample ID: 880-16162-A-1-B MS **Client Sample ID: Matrix Spike Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 28092** 

Project/Site: EP USA #005

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00199 U F1 0 100 0.06844 F1 mg/Kg 68 70 - 130 m-Xylene & p-Xylene <0.00398 U 0.200 0.1409 mg/Kg 70 70 - 130 o-Xylene <0.00199 U 0.100 0.07154 71 70 - 130 mg/Kg

MS MS

Surrogate	%Recovery Qualifie	r Limits
4-Bromofluorobenzene (Surr)	111	70 - 130
1,4-Difluorobenzene (Surr)	97	70 - 130

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

**Matrix: Solid** 

Lab Sample ID: 880-16162-A-1-C MSD

Prep Batch: 28110 **Analysis Batch: 28092** Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene <0.00199 U F1 0.100 0.08709 mg/Kg 70 - 130 24 35 87

Toluene 0.100 0.08310 83 70 - 130 35 <0.00199 UF1 mg/Kg 21 Ethylbenzene <0.00199 UF1 0.100 0.08633 mg/Kg 86 70 - 130 23 35 m-Xylene & p-Xylene <0.00398 U 0.200 0.1769 mg/Kg 88 70 - 130 23 35 <0.00199 U 0.100 0.08870 89 70 - 130 o-Xylene mg/Kg 21

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-28102/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA Prep Batch: 28102

**Analysis Batch: 28084** 

MB MB Analyte Result Qualifier RL **MDL** Unit **Prepared** Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 06/22/22 09:41 06/22/22 10:54 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 06/22/22 09:41 06/22/22 10:54 C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 06/22/22 09:41 06/22/22 10:54

MB MB

Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 1-Chlorooctane 70 - 130 06/22/22 09:41 06/22/22 10:54 104 70 - 130 06/22/22 09:41 06/22/22 10:54 o-Terphenyl 121

Lab Sample ID: LCS 880-28102/2-A

**Matrix: Solid** 

**Analysis Batch: 28084** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA Prep Batch: 28102 Snike LCS LCS

	Spike	LUS	LUS				/orec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	855.5		mg/Kg		86	70 - 130
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	1033		mg/Kg		103	70 - 130
C10-C28)							

Client: Ensolum Job ID: 890-2438-1 Project/Site: EP USA #005

SDG: 03A1987013

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

Lab Sample ID: LCS 880-28102/2-A

Lab Sample ID: LCSD 880-28102/3-A

Lab Sample ID: 880-16140-A-1-D MS

**Matrix: Solid** 

**Matrix: Solid** 

**Analysis Batch: 28084** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 28102

LCS LCS

%Recovery Qualifier Surrogate Limits 1-Chlorooctane 104 70 - 130 o-Terphenyl 115 70 - 130

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

**Prep Type: Total/NA** 

Prep Batch: 28102

**Analysis Batch: 28084** 

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 1000 817.2 mg/Kg 82 70 - 130 5 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 953.5 mg/Kg 95 70 - 130 8 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	109		70 - 130

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

Prep Batch: 28102

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Gasoline Range Organics <49.9 U 998 1070 mg/Kg 105 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 998 969.2 <49.9 U mg/Kg 95 70 - 130

C10-C28)

**Matrix: Solid** 

**Analysis Batch: 28084** 

MS MS

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

Lab Sample ID: 880-16140-A-1-E MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Solid** 

**Analysis Batch: 28084** 

Prep Type: Total/NA Prep Batch: 28102 Sample Sample Spike MSD MSD %Rec **RPD** 

Result Qualifier Added Result Qualifier Limits **RPD** Limit Analyte Unit %Rec mg/Kg <49.9 U 999 1035 101 70 - 130 20 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 999 982.5 mg/Kg 96 70 - 130 20

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	107		70 - 130

Client: Ensolum

Job ID: 890-2438-1

SDG: 03A1987013

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-28082/1-A

**Matrix: Solid** 

Lab Sample ID: LCS 880-28082/2-A

Client Sample ID: Method Blank

**Prep Type: Soluble** 

**Analysis Batch: 28134** 

Project/Site: EP USA #005

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac D Prepared 5.00 06/22/22 15:02 Chloride <5.00 U mg/Kg

**Client Sample ID: Lab Control Sample** 

%Rec

**Prep Type: Soluble** 

Client Sample ID: SW01

**Prep Type: Soluble** 

**Analysis Batch: 28134** 

**Matrix: Solid** 

Spike LCS LCS

Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 254.0 90 - 110 mg/Kg 102

Lab Sample ID: LCSD 880-28082/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 28134** 

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Limits **RPD** Limit Unit D %Rec Chloride 250 255.6 102 mg/Kg

Lab Sample ID: 890-2438-1 MS Client Sample ID: SW01 **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 28134** 

Spike MS MS %Rec Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits Chloride 333 F1 252 491.8 F1 mg/Kg 90 - 110

Lab Sample ID: 890-2438-1 MSD

**Matrix: Solid** 

**Analysis Batch: 28134** 

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 333 F1 252 494.4 F1 64 20 mg/Kg 90 - 110

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-2438-1

 Project/Site: EP USA #005
 SDG: 03A1987013

## **GC VOA**

#### **Analysis Batch: 28092**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Total/NA	Solid	8021B	28110
890-2438-2	SW02	Total/NA	Solid	8021B	28110
890-2438-3	SW03	Total/NA	Solid	8021B	28110
MB 880-28110/5-A	Method Blank	Total/NA	Solid	8021B	28110
LCS 880-28110/1-A	Lab Control Sample	Total/NA	Solid	8021B	28110
LCSD 880-28110/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	28110
880-16162-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	28110
880-16162-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	28110

#### Prep Batch: 28110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Total/NA	Solid	5035	
890-2438-2	SW02	Total/NA	Solid	5035	
890-2438-3	SW03	Total/NA	Solid	5035	
MB 880-28110/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-28110/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-28110/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-16162-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-16162-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### **Analysis Batch: 28158**

<b>Lab Sample ID</b> 890-2438-1	Client Sample ID SW01	Prep Type Total/NA	Matrix Solid	Method Total BTEX	Prep Batch
890-2438-2	SW02	Total/NA	Solid	Total BTEX	
890-2438-3	SW03	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### **Analysis Batch: 28084**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Total/NA	Solid	8015B NM	28102
890-2438-2	SW02	Total/NA	Solid	8015B NM	28102
890-2438-3	SW03	Total/NA	Solid	8015B NM	28102
MB 880-28102/1-A	Method Blank	Total/NA	Solid	8015B NM	28102
LCS 880-28102/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	28102
LCSD 880-28102/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	28102
880-16140-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	28102
880-16140-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	28102

#### Prep Batch: 28102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Total/NA	Solid	8015NM Prep	
890-2438-2	SW02	Total/NA	Solid	8015NM Prep	
890-2438-3	SW03	Total/NA	Solid	8015NM Prep	
MB 880-28102/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-28102/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-28102/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-16140-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-16140-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

**Eurofins Carlsbad** 

Released to Imaging: 3/21/2023 2:21:21 PM

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# **QC Association Summary**

Client: Ensolum Job ID: 890-2438-1 Project/Site: EP USA #005 SDG: 03A1987013

# **GC Semi VOA**

#### **Analysis Batch: 28177**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Total/NA	Solid	8015 NM	
890-2438-2	SW02	Total/NA	Solid	8015 NM	
890-2438-3	SW03	Total/NA	Solid	8015 NM	

#### **HPLC/IC**

#### Leach Batch: 28082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Soluble	Solid	DI Leach	
890-2438-2	SW02	Soluble	Solid	DI Leach	
890-2438-3	SW03	Soluble	Solid	DI Leach	
MB 880-28082/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-28082/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-28082/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2438-1 MS	SW01	Soluble	Solid	DI Leach	
890-2438-1 MSD	SW01	Soluble	Solid	DI Leach	

#### **Analysis Batch: 28134**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2438-1	SW01	Soluble	Solid	300.0	28082
890-2438-2	SW02	Soluble	Solid	300.0	28082
890-2438-3	SW03	Soluble	Solid	300.0	28082
MB 880-28082/1-A	Method Blank	Soluble	Solid	300.0	28082
LCS 880-28082/2-A	Lab Control Sample	Soluble	Solid	300.0	28082
LCSD 880-28082/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	28082
890-2438-1 MS	SW01	Soluble	Solid	300.0	28082
890-2438-1 MSD	SW01	Soluble	Solid	300.0	28082

Job ID: 890-2438-1 SDG: 03A1987013

**Client Sample ID: SW01** 

Project/Site: EP USA #005

Client: Ensolum

Lab Sample ID: 890-2438-1

**Matrix: Solid** 

Date Collected: 06/17/22 13:00 Date Received: 06/21/22 09:06

	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	28110	06/22/22 09:57	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	28092	06/22/22 12:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28158	06/22/22 14:29	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28177	06/22/22 17:01	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	28102	06/22/22 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			28084	06/22/22 13:47	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	28082	06/21/22 19:10	SC	XEN MID
Soluble	Analysis	300.0		1			28134	06/22/22 15:26	CH	XEN MID

**Client Sample ID: SW02** Lab Sample ID: 890-2438-2

Date Collected: 06/17/22 13:45 **Matrix: Solid** Date Received: 06/21/22 09:06

	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	28110	06/22/22 09:57	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	28092	06/22/22 12:27	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28158	06/22/22 14:29	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28177	06/22/22 17:01	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	28102	06/22/22 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			28084	06/22/22 14:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	28082	06/21/22 19:10	SC	XEN MID
Soluble	Analysis	300.0		1			28134	06/22/22 15:49	CH	XEN MID

**Client Sample ID: SW03** Lab Sample ID: 890-2438-3 Date Collected: 06/17/22 14:30 **Matrix: Solid** 

Date Received: 06/21/22 09:06

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	28110	06/22/22 09:57	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	28092	06/22/22 12:48	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			28158	06/22/22 14:29	SM	XEN MID
Total/NA	Analysis	8015 NM		1			28177	06/22/22 17:01	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	28102	06/22/22 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			28084	06/22/22 14:30	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	28082	06/21/22 19:10	SC	XEN MID
Soluble	Analysis	300.0		1			28134	06/22/22 15:57	CH	XEN MID

**Laboratory References:** 

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2438-1 Project/Site: EP USA #005 SDG: 03A1987013

## **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	T104704400-21-22	06-30-22
The following analyte	e are included in this reno	art but the laboratory is r	ant nortified by the governing outbarity	This list may include analytee for w
the agency does not	offer certification.	•	not certified by the governing authority.	This list may include analytes for v
	•	Matrix	Analyte	This list may include analytes for v
the agency does not	offer certification.	•	, , ,	This list may include analytes for v

# **Method Summary**

Client: Ensolum

Project/Site: EP USA #005

Job ID: 890-2438-1

SDG: 03A1987013

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
3015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
800.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
3015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

#### **Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### **Laboratory References:**

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

# **Sample Summary**

Client: Ensolum

Lab Sample ID

890-2438-1 890-2438-2

890-2438-3

Project/Site: EP USA #005

Job ID: 890-2438-1 SDG: 03A1987013

Client Sample ID	Matrix	Collected	Received	Depth
SW01	Solid	06/17/22 13:00	06/21/22 09:06	0' - 4'
SW02	Solid	06/17/22 13:45	06/21/22 09:06	0' - 4'
SW03	Solid	06/17/22 14:30	06/21/22 09:06	0' - 4'

# Chain of Custody

: Joseph Hernandez  Ensolum  3122 National Parks HWY  Carlsbad, NM 88220  Carlsbad, NM 88220  Email: jhernands  EP USA #005  Turn Around  Routine ☑ Rush	eurofins	Environment T Xenco	festing	Houston, TX Midland, TX (4: EL Paso, TX	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 Lubbs, NM (675) 392-7550 Codebad, NM (675) 382-3100	Work Order No:
				Hobbs, NM (	Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	www.xenco.com Page 1 of 1
Ensolum	ject Manager:	Joseph Hernandez	Bill to:		Jim Raley	Work Order Comments
3122 National Parks HWY   Address:   5315 Buena Visita Dr.   State of Project:   TRRP	npany Name:	Ensolum	Compa		WPX	Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐ Superfund ☐
Carlsbad, NM 88220         City, State ZIP:         Carlsbad, NM 88220         Reporting: Level III  Level III  PST/UST  TRRP         TRRP           281-702-2329         Email: hernandez@Ensolum.com. jim.raley@dvn.com         Deliverables: EDD  Deliverables: EDD  Deliverables: EDD  Preservation         ADaPT  Preservation         Preservation           B	iress:	3122 National Parks HWY	Addres	SS:	5315 Buena Vista Dr.	State of Project:
281-702-2329         Email:   jhernandez@Ensolum.com, jim.raley@dvn.com         Deliverables: EDD □ ADaPT □ Other:         ADaPT □ Other:           EP USA #005         Turn Around         Image: Preservation of Code         ANALYSIS REQUEST         Preservation		Carlsbad, NM 88220	City, S		Carlsbad, NM 88220	Reporting: Level III Devel III PST/UST TRRP Level IV
EP USA #005     Turn Around     end of the servet       03A1987013     □ Routine     □ Routine <td< td=""><td>ine:</td><td>281-702-2329</td><td>Email: jherna</td><td>andez@Ensolu</td><td>m.com, jim.raley@dvn.com</td><td>ADaPT 🗆</td></td<>	ine:	281-702-2329	Email: jherna	andez@Ensolu	m.com, jim.raley@dvn.com	ADaPT 🗆
03A1987013 Routine Na Rush Code None: NO	ect Name:	EP USA #005	Turn Aroun	ā.	ANALYSIS RE	EST
	ect Number:	03A1987013				

Project Number:

roject Name:

Address: City, State ZIP:

Project Manager:

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2438-1

SDG Number: 03A1987013

Login Number: 2438 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.	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").

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2438-1 SDG Number: 03A1987013

Login Number: 2438 **List Source: Eurofins Midland** List Creation: 06/22/22 10:50 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	
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").

**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Devon Team

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 1/27/2023 7:52:27 AM Revision 2

## **JOB DESCRIPTION**

EP USA 5 SDG NUMBER 03A1987013

# **JOB NUMBER**

890-3884-1

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 1/27/2023 7:52:27 AM Revision 2

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

Client: Ensolum
Project/Site: EP USA 5
Laboratory Job ID: 890-3884-1
SDG: 03A1987013

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3884-1
Project/Site: EP USA 5 SDG: 03A1987013

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**Qualifiers** 

**GC VOA** 

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier Qualifier Description

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

HPLC/IC

Qualifier Qualifier Description

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

Glossary

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

Eisted 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: 890-3884-1

 Project/Site: EP USA 5
 SDG: 03A1987013

Job ID: 890-3884-1

**Laboratory: Eurofins Carlsbad** 

**Narrative** 

Job Narrative 890-3884-1

#### **REVISION**

The report being provided is a revision of the original report sent on 1/23/2023. The report (revision 2) is being revised due to Per client email, requesting sample ID correction from SW01 to SW04.

Report revision history

The report being provided is a revision of the original report sent on 1/23/2023. The report (revision 2) is being revised due to Per client email, requesting sample ID correction from SW01 to SW04.

Revision 1 - 1/23/2023 - Reason - Chain of custody missing on final report.

#### Receipt

The sample was received on 1/19/2023 11:42 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 5.4°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: SW04 (890-3884-1).

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): SW04 (890-3884-1). The container labels list <SAMPLE\_ID>, while the COC lists <SAMPLEID>. The client was contacted, and the lab was instructed to <EXPLANATION REQUIRED>.

890-3884

**JAR** 

EP USA 5

WPX

SW04 1-17-23 0-4 8:20

COC

**EP USA** 

WPX

SW01 1-17-23 0-4 8:20

BASED OFF THE TIME, DATE, DEPTH, INFO, THIS IS THE SAME SAMPLE

TALKED TO CLIENT YOCOLY AT 1:38 SAME SAMPLE

#### **GC VOA**

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

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (890-3840-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-44367 and analytical batch 880-44405 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.

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#### **Case Narrative**

Client: Ensolum Project/Site: EP USA 5 Job ID: 890-3884-1 SDG: 03A1987013

Job ID: 890-3884-1 (Continued)

**Laboratory: Eurofins Carlsbad (Continued)** 

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

**Matrix: Solid** 

Lab Sample ID: 890-3884-1

Client: Ensolum Job ID: 890-3884-1
Project/Site: EP USA 5 SDG: 03A1987013

Client Sample ID: SW04

Date Collected: 01/17/23 08:20 Date Received: 01/19/23 11:42

Sample Depth: 0 - 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:15	1
Toluene	< 0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:15	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:15	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/19/23 16:39	01/20/23 14:15	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:15	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/19/23 16:39	01/20/23 14:15	,
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	104		70 - 130				01/19/23 16:39	01/20/23 14:15	-
1,4-Difluorobenzene (Surr)	115		70 - 130				01/19/23 16:39	01/20/23 14:15	
Method: TAL SOP Total BTEX	. Total BTE	X Calculat	ion						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/20/23 14:35	
	_	•							
Method: SW846 8015 NM - Did Analyte	Result	Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fa
Analyte Total TPH	<b>Result</b> <49.9	Qualifier U	<b>RL</b> 49.9	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 01/23/23 11:26	Dil Fa
Analyte Total TPH  **  Method: SW846 8015B NM - E	Result <49.9	Qualifier U Organics	<b>RL</b> 49.9		mg/Kg	_ =	Prepared	01/23/23 11:26	
Analyte Total TPH  Method: SW846 8015B NM - E Analyte	Result <49.9 Diesel Range Result	Qualifier U Organics Qualifier	RL 49.9 (DRO) (GC) RL		mg/Kg Unit	<u>D</u>	Prepared	01/23/23 11:26 Analyzed	Dil Fac
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	_ =	· ·	01/23/23 11:26 Analyzed	Dil Fac
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	01/23/23 11:26  Analyzed 01/20/23 12:18	Dil Fa
Analyte Total TPH  Method: SW846 8015B NM - December 2015 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 01/20/23 10:42 01/20/23 10:42	01/23/23 11:26  Analyzed 01/20/23 12:18	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - December 2015 Analyte Gasoline Range Organics (GRO)-C6-C10	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 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared	01/23/23 11:26  Analyzed 01/20/23 12:18  01/20/23 12:18  01/20/23 12:18  Analyzed	Dil Fac
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 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared	01/23/23 11:26  Analyzed 01/20/23 12:18 01/20/23 12:18 01/20/23 12:18	Dil Fac
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 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared 01/20/23 10:42	01/23/23 11:26  Analyzed 01/20/23 12:18  01/20/23 12:18  01/20/23 12:18  Analyzed	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)	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 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared 01/20/23 10:42	Analyzed 01/20/23 12:18 01/20/23 12:18 01/20/23 12:18 01/20/23 12:18 Analyzed 01/20/23 12:18	Dil Fac
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 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 mg/Kg	_ =	Prepared 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared 01/20/23 10:42	Analyzed 01/20/23 12:18 01/20/23 12:18 01/20/23 12:18 01/20/23 12:18 Analyzed 01/20/23 12:18	Dil Fac

## **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-3884-1

 Project/Site: EP USA 5
 SDG: 03A1987013

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

			Percer	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-23936-A-1-A MS	Matrix Spike	97	114	
880-23936-A-1-B MSD	Matrix Spike Duplicate	95	114	
890-3884-1	SW04	104	115	
LCS 880-44393/1-A	Lab Control Sample	97	113	
LCSD 880-44393/2-A	Lab Control Sample Dup	92	111	
MB 880-44393/5-A	Method Blank	95	110	
Surrogate Legend				
BFB = 4-Bromofluorobe	enzene (Surr)			
DFBZ = 1,4-Difluorobe	nzene (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)	
890-3840-A-1-E MS	Matrix Spike	94	69 S1-	
890-3840-A-1-F MSD	Matrix Spike Duplicate	98	73	
890-3884-1	SW04	89	83	
LCS 880-44144/2-A	Lab Control Sample	121	118	
LCSD 880-44144/3-A	Lab Control Sample Dup	101	98	
MB 880-44144/1-A	Method Blank	111	103	
Surrogate Legend				

1CO = 1-Chlorooctane OTPH = o-Terphenyl 3

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Client: Ensolum Job ID: 890-3884-1 Project/Site: EP USA 5 SDG: 03A1987013

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

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 44393

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

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95	70 - 130	01/19/23 16:39	01/20/23 12:04	1
1,4-Difluorobenzene (Surr)	110	70 - 130	01/19/23 16:39	01/20/23 12:04	1

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 44393

١		Spike	LCS	LCS				%Rec	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
١	Benzene	0.100	0.09599		mg/Kg		96	70 - 130	
	Toluene	0.100	0.09139		mg/Kg		91	70 - 130	
	Ethylbenzene	0.100	0.08837		mg/Kg		88	70 - 130	
	m-Xylene & p-Xylene	0.200	0.1809		mg/Kg		90	70 - 130	
	o-Xylene	0.100	0.08607		mg/Kg		86	70 - 130	
1									

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

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

Prep Batch: 44393

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

LCSD LCSD

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

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

**Matrix: Solid** 

Toluene

**Analysis Batch: 44418** 

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

70 - 130

92

Prep Batch: 44393

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Benzene <0.00198 U 0.0998 0.09771 98 70 - 130 mg/Kg <0.00198 U 0.0998

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0.09186

mg/Kg

Client: Ensolum Job ID: 890-3884-1 Project/Site: EP USA 5 SDG: 03A1987013

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

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**Client Sample ID: Matrix Spike** Lab Sample ID: 880-23936-A-1-A MS **Matrix: Solid** Prep Type: Total/NA

Prep Batch: 44393 **Analysis Batch: 44418** 

	Sample	Sample	<b>Бріке</b>	INIO	INIO				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00198	U	0.0998	0.09038		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	< 0.00396	U	0.200	0.1866		mg/Kg		93	70 - 130	
o-Xylene	< 0.00198	U	0.0998	0.08930		mg/Kg		89	70 - 130	

MS MS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 70 - 130 97

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

70 - 130

**Matrix: Solid** 

**Analysis Batch: 44418** 

1,4-Difluorobenzene (Surr)

Prep Batch: 44393 Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene <0.00198 U 0.100 70 - 130 2 35 0.09615 mg/Kg 96 Toluene <0.00198 U 0.08993 90 70 - 130 2 35 0.100 mg/Kg Ethylbenzene <0.00198 U 0.100 0.08612 mg/Kg 86 70 - 130 5 35 m-Xylene & p-Xylene <0.00396 U 0.200 0.1753 87 70 - 130 6 35 mq/Kq <0.00198 U 0.100 83 o-Xylene 0.08306 mg/Kg 70 - 130

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

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

Lab Sample ID: MB 880-44144/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA Prep Batch: 44144

**Analysis Batch: 44408** 

**Matrix: Solid** 

	MB	MB						
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	Ū	50.0	mg/Kg		01/17/23 10:42	01/20/23 08:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/17/23 10:42	01/20/23 08:13	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/17/23 10:42	01/20/23 08:13	1

MB MB Surrogate Qualifier Limits Prepared Analyzed Dil Fac %Recovery 01/17/23 10:42 01/20/23 08:13 1-Chlorooctane 70 - 130 111 103 70 - 130 01/17/23 10:42 01/20/23 08:13 o-Terphenyl

Lab Sample ID: LCS 880-44144/2-A **Client Sample ID: Lab Control Sample** 

**Analysis Batch: 44408** Prep Batch: 44144

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	748.3		mg/Kg		75	70 - 130	 
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	737.5		mg/Kg		74	70 - 130	
C10-C28)								

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**Prep Type: Total/NA** 

Prep Type: Total/NA

Job ID: 890-3884-1 Client: Ensolum Project/Site: EP USA 5

SDG: 03A1987013

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

Lab Sample ID: LCS 880-44144/2-A **Matrix: Solid** 

**Analysis Batch: 44408** 

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

Prep Batch: 44144

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	121		70 - 130
o-Terphenyl	118		70 - 130

Lab Sample ID: LCSD 880-44144/3-A

**Matrix: Solid** 

**Analysis Batch: 44408** 

Cilent Sample	ID: Lai	Contro	וטע Sample ו	þ
		Duam T	Tatal/NI	

Prep Type: Total/NA

Prep Batch: 44144

	Spil	te LCSD	LCSD				%Rec		RPD
Analyte	Adde	d Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	100	704.0		mg/Kg		70	70 - 130	6	20
(GRO)-C6-C10									
Diesel Range Organics (Over	100	00 759.5	i	mg/Kg		76	70 - 130	3	20
C10-C28)									

LCSD LCSD

Surrogate	%Recovery Quali	ifier Limits
1-Chlorooctane	101	70 - 130
o-Terphenyl	98	70 - 130

Lab Sample ID: 890-3840-A-1-E MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid** 

**Analysis Batch: 44408** 

**Prep Type: Total/NA** 

Prep Batch: 44144

	Sample	Sample	<b>Бріке</b>	IVIS	INIO				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	874.6		mg/Kg		88	70 - 130	
Diesel Range Organics (Over	<49.9	U	998	752.1		mg/Kg		71	70 - 130	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	69	S1-	70 - 130

Lab Sample ID: 890-3840-A-1-F MSD

**Matrix: Solid** 

**Analysis Batch: 44408** 

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

Prep Batch: 44144

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	853.1		mg/Kg		86	70 - 130	2	20
Diesel Range Organics (Over	<49.9	U	997	776.7		mg/Kg		73	70 - 130	3	20

C10-C28)

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenvl	73		70 - 130

## QC Sample Results

Client: Ensolum Job ID: 890-3884-1 Project/Site: EP USA 5 SDG: 03A1987013

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44367/1-A

Lab Sample ID: LCS 880-44367/2-A

Client Sample ID: Method Blank

**Prep Type: Soluble** 

**Analysis Batch: 44405** 

**Matrix: Solid** 

**Matrix: Solid** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Analyzed Dil Fac D Prepared 5.00 01/20/23 00:05 Chloride <5.00 U mg/Kg

**Client Sample ID: Lab Control Sample** 

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Analysis Batch: 44405** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 272.8 90 - 110 mg/Kg 109

Lab Sample ID: LCSD 880-44367/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 44405** 

Spike LCSD LCSD %Rec **RPD** Added Result Qualifier Limits **RPD** Limit Analyte Unit %Rec Chloride 250 273.9 90 - 110 mg/Kg

Lab Sample ID: 880-23914-A-31-B MS **Client Sample ID: Matrix Spike Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 44405** 

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 78.5 F1 250 363.9 F1 mg/Kg 114 90 - 110

Lab Sample ID: 880-23914-A-31-C MSD

**Matrix: Solid** 

**Analysis Batch: 44405** 

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit Limits RPD Limit %Rec Chloride 78.5 F1 250 370.3 F1 117 20 mg/Kg 90 - 110

# **QC Association Summary**

Client: Ensolum Job ID: 890-3884-1 Project/Site: EP USA 5 SDG: 03A1987013

#### **GC VOA**

#### Prep Batch: 44393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Total/NA	Solid	5035	
MB 880-44393/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### **Analysis Batch: 44418**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Total/NA	Solid	8021B	44393
MB 880-44393/5-A	Method Blank	Total/NA	Solid	8021B	44393
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	8021B	44393
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	44393
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	44393
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	44393

## **Analysis Batch: 44487**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 44144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Total/NA	Solid	8015NM Prep	
MB 880-44144/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-44144/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-44144/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3840-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3840-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 44408**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Total/NA	Solid	8015B NM	44144
MB 880-44144/1-A	Method Blank	Total/NA	Solid	8015B NM	44144
LCS 880-44144/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	44144
LCSD 880-44144/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	44144
890-3840-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	44144
890-3840-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	44144

#### Analysis Batch: 44544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 44367

<b>Lab Sample ID</b> 890-3884-1	Client Sample ID SW04	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-44367/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44367/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44367/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

## **QC Association Summary**

 Client: Ensolum
 Job ID: 890-3884-1

 Project/Site: EP USA 5
 SDG: 03A1987013

## **HPLC/IC (Continued)**

#### Leach Batch: 44367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-23914-A-31-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-23914-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 44405**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3884-1	SW04	Soluble	Solid	300.0	44367
MB 880-44367/1-A	Method Blank	Soluble	Solid	300.0	44367
LCS 880-44367/2-A	Lab Control Sample	Soluble	Solid	300.0	44367
LCSD 880-44367/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44367
880-23914-A-31-B MS	Matrix Spike	Soluble	Solid	300.0	44367
880-23914-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44367

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Date Received: 01/19/23 11:42

### **Lab Chronicle**

Client: Ensolum Job ID: 890-3884-1 Project/Site: EP USA 5 SDG: 03A1987013

**Client Sample ID: SW04** Lab Sample ID: 890-3884-1 Date Collected: 01/17/23 08:20

**Matrix: Solid** 

	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	44393	01/19/23 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44418	01/20/23 14:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44487	01/20/23 14:35	AJ	EET MID
Total/NA	Analysis	8015 NM		1			44544	01/23/23 11:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	44144	01/20/23 10:42	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44408	01/20/23 12:18	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	44367	01/19/23 14:46	KS	EET MID
Soluble	Analysis	300.0		5			44405	01/20/23 11:38	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: 890-3884-1

 Project/Site: EP USA 5
 SDG: 03A1987013

## **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 analyte	s are included in this reno	ort but the laboratory is r	not certified by the governing authority.	This list may include analytee for w
the agency does not	•	ort, but the laboratory is i	lot certified by the governing authority.	This list may include analytes for w
	•	Matrix	Analyte	This list may include analytes for w
the agency does not	offer certification.	•		This list may include analytes for w

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## **Method Summary**

Client: Ensolum Project/Site: EP USA 5 Job ID: 890-3884-1 SDG: 03A1987013

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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SW04

# **Sample Summary**

Client: Ensolum

890-3884-1

Project/Site: EP USA 5

Job ID: 890-3884-1 SDG: 03A1987013

Lab Sample ID Client Sample ID Matrix Collected Received Depth

Solid

01/17/23 08:20 01/19/23 11:42 0 - 4

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**Environment Testing** 

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# Chain of Custody TX (281) 240-4200, Dallas, TX (214) 90

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

Work Order No:

Work Ore	<b>Work Order Comments</b>	ents	
Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐ Superfund ☐	Brownfields	RRC S	uperfund [
State of Project:			
Reporting: Level II 🗌 Level III 🗎 PST/UST 📗 TRRP 📗	PST/UST		Level IV
Deliverables: EDD	ADaPT 🗆	Other	

City, State ZIP:

3122 National Parks HWY Carlsbad, NM 88220 281-702-2329

Email: jhernandez@ensolum.com, jim.raley@dvn.com

City, State ZIP:

5315 Buena Vista Dr. Carlsbad, NM 88220 Bill to: (if different)
Company Name:

WPX

Jim Raley

\ddress:

Project Manager: Company Name:

Ensolum

Joseph Hernandez

Revised Date: 08/75/7020 Rev. 2020 2		3	6		-		G			
			311422	.19.23				Mark		Sylv Kolan Jak
Date/Time	Received by: (Signature)	Relinquished by: (Signature)	ime	Date/Time	_	ure)	Received by: (Signature)	Receive	ature)	Relinquished by: (Signature)
	tors. It assigns standard terms and conditions ses are due to circumstances beyond the control terms will be enforced unless previously negotiated.		o Eurofins Xen or expenses in ad to Eurofins X	nt company i or any losses nple submitte	from cliensibility for each san	rchase order ne any respoi arge of \$5 for	stitutes a valid pu d shall not assur project and a ch	of samples cons it of samples an applied to each	t and relinquishment liable only for the co arge of \$85.00 will be	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontrac 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 loss 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
7470 / 7471	^g TI U Hg: 1631/245.1/7470 /7471	Sh As Ba Be Cd Cr Co Cu Ph Mn Mo Ni Se Ag Tl U	Ba Be Co		8RCR/	LP 6010:	TCLP / SPLP 6010: 8RCRA	zed	al(s) to be analy	Circle Method(s) and Metal(s) to be analyzed
Sn U V Zn	Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn	Ca Cr Co Cu Fe	Ba Be B Cd	Sb As Ba Be	Texas 11 Al		8RCRA 13PPM	88	200.8 / 6020:	Total 200.7 / 6010
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NMAP1826970471	ZX									
Incident Numbers	Inc									
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			×	×	Comp 2	0 - 4' C	8:20	01.17.23	S	SW01
Sample Comments	San		TPH (86	플 및 CHLOR	Grab/ # of Comp Cont	Depth G	Time Sampled	Date Sampled	on Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC	NaOH+As		_	RIDES		5.4	emperature:	Corrected Temperature:		Total Containers:
Zn Acetate+NaOH: Zn				S (EI		2.6	e Reading:	Temperature Reading:	Yes No N/A	Sample Custody Seals:
NaSO <sub>3</sub>		890-3884 Chain of Custody		_		10.		Correction Factor:	Yes No NA	Cooler Custody Seals:
NABIS	NaHSO <sub>4</sub> : NABIS				arai	SOMO	1	Thermometer ID:	Yes No	Samples Received Intact:
ō	H <sub>3</sub> PO <sub>4</sub> : HP			_	nete	Yes No	Wet ice:	Cyes No	Temp Blank:	SAMPLE RECEIPT
NaOH: Na	H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub>				L	1 4:30	the lab, if received by 4:30pm		1061232001	CC#
	HCL: HC				\$	deliverented	TAT starts the de received to	onan	Yocoly Edyte Konan	Sampler's Name:
ol MeOH: Me	Cool: Cool				T	24H TAT	Due Date:	M	Eddy County, NM	Project Location:
DI Water: H <sub>2</sub> O	None: NO			de .	Code	Ryan	Routine	ω	03A1987013	Project Number:
Lead Adria Codea		ANALTOIS ACQUEST			5	Turn Around	Turn		EP USA 5	Project Name:

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3884-1

SDG Number: 03A1987013

Login Number: 3884 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	

Page 20 of 21

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## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3884-1

SDG Number: 03A1987013

List Source: Eurofins Midland
List Number: 2
List Creation: 01/20/23 10:42 AM

Creator: Rodriguez, Leticia

<6mm (1/4").

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	

Eurofins Carlsbad

Released to Imaging: 3/21/2023 2:21:21 PM

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**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Devon Team

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 1/27/2023 7:51:37 AM Revision 1

## **JOB DESCRIPTION**

EP USA 5 SDG NUMBER 03A1987013

# **JOB NUMBER**

890-3886-1

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 1/27/2023 7:51:37 AM

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

Revision 1

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies Page 2 of 20

Client: Ensolum

Laboratory Job ID: 890-3886-1

Project/Site: EP USA 5

SDG: 03A1987013

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## **Definitions/Glossary**

 Client: Ensolum
 Job ID: 890-3886-1

 Project/Site: EP USA 5
 SDG: 03A1987013

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#### **Qualifiers**

**GC VOA** 

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier Qualifier Description

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

**HPLC/IC** 

Qualifier Qualifier Description

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

Glossary

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

Eisted 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

**Eurofins Carlsbad** 

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IC

#### Case Narrative

Client: Ensolum Job ID: 890-3886-1
Project/Site: EP USA 5 SDG: 03A1987013

Job ID: 890-3886-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3886-1

#### REVISION

The report being provided is a revision of the original report sent on 1/23/2023. The report (revision 1) is being revised due to Per client email, requesting sample ID correction from SW02 to SW05.

Report revision history

#### Receipt

The sample was received on 1/19/2023 11:42 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 5.4°C

#### **Receipt Exceptions**

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): SW05 (890-3886-1). The container labels list <SAMPLE\_ID>, while the COC lists <SAMPLEID>. The client was contacted, and the lab was instructed to <EXPLANATION\_REQUIRED>.

890-3886

JAR

EP USA 5

WPX

SW05 1-17-23 0-4 8:50

COC

**EP USA** 

**WPX** 

SW02 1-17-23 0-4 8:50

BASED OFF THE TIME, DATE, DEPTH, INFO, THIS IS THE SAME SAMPLE

TALKED TO CLIENT YOCOLY AT 1:38 SAME SAMPLE

#### **GC VOA**

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

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (890-3840-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-44367 and analytical batch 880-44405 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.

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Matrix: Solid

Job ID: 890-3886-1

Client: Ensolum Project/Site: EP USA 5 SDG: 03A1987013

**Client Sample ID: SW05** Lab Sample ID: 890-3886-1 Date Collected: 01/17/23 08:50 Date Received: 01/19/23 11:42

Sample Depth: 0 - 4

**Chloride** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:36	1
Toluene	< 0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:36	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:36	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/19/23 16:39	01/20/23 14:36	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		01/19/23 16:39	01/20/23 14:36	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/19/23 16:39	01/20/23 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130				01/19/23 16:39	01/20/23 14:36	1
1,4-Difluorobenzene (Surr)	115		70 - 130				01/19/23 16:39	01/20/23 14:36	1
Method: TAL SOP Total BTEX	- Total BTE	X Calculat	ion						
		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Nesuit	Quanner				_		,	
Analyte Total BTEX	<0.00398		0.00398		mg/Kg	_ =		01/23/23 12:52	1
Total BTEX  Method: SW846 8015 NM - Die  Analyte	<0.00398 esel Range ( Result	Organics ( Qualifier	0.00398  DRO) (GC) RL	MDL	mg/Kg Unit		Prepared	01/23/23 12:52  Analyzed	1
Total BTEX  Method: SW846 8015 NM - Did	<0.00398	Organics ( Qualifier	0.00398 DRO) (GC)		mg/Kg			01/23/23 12:52	1
Total BTEX  Method: SW846 8015 NM - Die  Analyte	<0.00398 esel Range ( Result <49.9	Organics ( Qualifier	0.00398  DRO) (GC) RL 49.9		mg/Kg Unit			01/23/23 12:52  Analyzed	1
Total BTEX  Method: SW846 8015 NM - Die Analyte  Total TPH	<0.00398 esel Range ( Result <49.9 Diesel Range	Organics ( Qualifier	0.00398  DRO) (GC) RL 49.9		mg/Kg  Unit mg/Kg			01/23/23 12:52  Analyzed	Dil Fac
Method: SW846 8015 NM - Did Analyte Total TPH  Method: SW846 8015B NM - D Analyte Gasoline Range Organics	<0.00398 esel Range ( Result <49.9 Diesel Range	Organics ( Qualifier U Organics Qualifier Qualifier	0.00398  DRO) (GC) RL 49.9  (DRO) (GC)	MDL	mg/Kg  Unit mg/Kg	<u>D</u>	Prepared	01/23/23 12:52  Analyzed  01/23/23 11:26  Analyzed	Dil Fac
Method: SW846 8015 NM - Did Analyte Total TPH  Method: SW846 8015B NM - D Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<0.00398 esel Range (Result) <49.9 Diesel Range (Result)	Organics ( Qualifier U Organics Qualifier U Organics Qualifier U	0.00398  DRO) (GC) RL 49.9  (DRO) (GC) RL	MDL	mg/Kg  Unit mg/Kg  Unit	<u>D</u>	Prepared  01/20/23 10:42	01/23/23 12:52  Analyzed  01/23/23 11:26  Analyzed	Dil Fac  Dil Fac
Method: SW846 8015 NM - Did Analyte Total TPH  Method: SW846 8015B NM - D Analyte Gasoline Range Organics (GRO)-C6-C10	<0.00398 esel Range (Result  <49.9 Diesel Range Result  <49.9	Organics ( Qualifier U Organics Qualifier U Organics Outline U	0.00398  DRO) (GC) RL 49.9  (DRO) (GC) RL 49.9	MDL	mg/Kg  Unit mg/Kg  Unit mg/Kg	<u>D</u>	Prepared  01/20/23 10:42 01/20/23 10:42	01/23/23 12:52  Analyzed 01/23/23 11:26  Analyzed 01/20/23 12:40	Dil Fac  Dil Fac  1
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)	<0.00398 esel Range (Result  <49.9 Diesel Range Result  <49.9	Organics ( Qualifier U Organics Qualifier U U U U	0.00398  DRO) (GC) RL 49.9  (DRO) (GC) RL 49.9  49.9	MDL	mg/Kg  Unit mg/Kg  Unit mg/Kg  mg/Kg	<u>D</u>	Prepared  01/20/23 10:42 01/20/23 10:42	Analyzed 01/23/23 12:52  Analyzed 01/23/23 11:26  Analyzed 01/20/23 12:40 01/20/23 12:40	Dil Fac
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) Oll Range Organics (Over C28-C36)	<0.00398 esel Range (Result  <49.9 Oiesel Range Result  <49.9 <49.9	Organics ( Qualifier U Organics Qualifier U U U U	0.00398  DRO) (GC) RL 49.9  (DRO) (GC) RL 49.9  49.9  49.9	MDL	mg/Kg  Unit mg/Kg  Unit mg/Kg  mg/Kg	<u>D</u>	Prepared  01/20/23 10:42  01/20/23 10:42  01/20/23 10:42  Prepared	Analyzed 01/23/23 12:52  Analyzed 01/23/23 11:26  Analyzed 01/20/23 12:40 01/20/23 12:40 01/20/23 12:40	1 Dil Fac 1 Dil Fac 1 1 1 1

25.0

mg/Kg

93.9

01/20/23 11:44

## **Surrogate Summary**

Client: Ensolum Job ID: 890-3886-1 Project/Site: EP USA 5 SDG: 03A1987013

Method: 8021B - Volatile Organic Compounds (GC)

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

		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-23936-A-1-A MS	Matrix Spike	97	114	
880-23936-A-1-B MSD	Matrix Spike Duplicate	95	114	
890-3886-1	SW05	104	115	
LCS 880-44393/1-A	Lab Control Sample	97	113	
LCSD 880-44393/2-A	Lab Control Sample Dup	92	111	
MB 880-44393/5-A	Method Blank	95	110	
Surrogate Legend				
BFB = 4-Bromofluorobe	enzene (Surr)			
DFBZ = 1,4-Difluorobe	nzene (Surr)			

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

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

			Percen	t Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3840-A-1-E MS	Matrix Spike	94	69 S1-	
890-3840-A-1-F MSD	Matrix Spike Duplicate	98	73	
890-3886-1	SW05	103	90	
LCS 880-44144/2-A	Lab Control Sample	121	118	
LCSD 880-44144/3-A	Lab Control Sample Dup	101	98	
MB 880-44144/1-A	Method Blank	111	103	
Surrogate Legend	метной ыапк	111	103	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3886-1 Project/Site: EP USA 5 SDG: 03A1987013

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

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 44393

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

MB MB

Surrogate	%Recovery Qua	lifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95	70 - 130	01/19/23 16:39	01/20/23 12:04	1
1,4-Difluorobenzene (Surr)	110	70 - 130	01/19/23 16:39	01/20/23 12:04	1

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Prep Batch: 44393

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09599		mg/Kg		96	70 - 130	
Toluene	0.100	0.09139		mg/Kg		91	70 - 130	
Ethylbenzene	0.100	0.08837		mg/Kg		88	70 - 130	
m-Xylene & p-Xylene	0.200	0.1809		mg/Kg		90	70 - 130	
o-Xylene	0.100	0.08607		mg/Kg		86	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

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

Prep Type: Total/NA

Prep Batch: 44393

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

LCSD LCSD

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

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

Released to Imaging: 3/21/2023 2:21:21 PM

**Matrix: Solid** 

**Analysis Batch: 44418** 

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

Prep Batch: 44393

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Benzene

mg/Kg <0.00198 U 0.0998 0.09771 98 70 - 130 Toluene <0.00198 U 0.0998 0.09186 mg/Kg 92 70 - 130

Client: Ensolum Job ID: 890-3886-1
Project/Site: EP USA 5 SDG: 03A1987013

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

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

Client Sample ID: Matrix Spike
Matrix: Solid

Prep Type: Total/NA

**Analysis Batch: 44418** 

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

MS MS

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

Lab Sample ID: 880-23936-A-1-B MSD

Matrix: Solid

**Analysis Batch: 44418** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 44393

Prep Batch: 44393

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

MSD MSD

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

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

Lab Sample ID: MB 880-44144/1-A

**Matrix: Solid** 

**Analysis Batch: 44408** 

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 44144

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Gasoline Range Organics <50.0 U 50.0 01/17/23 10:42 01/20/23 08:13 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 01/17/23 10:42 01/20/23 08:13 C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 01/17/23 10:42 01/20/23 08:13

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130	01/17/23 10:42	01/20/23 08:13	1
o-Terphenyl	103		70 - 130	01/17/23 10:42 (	01/20/23 08:13	1

Lab Sample ID: LCS 880-44144/2-A

**Matrix: Solid** 

**Analysis Batch: 44408** 

Client	Sampl	e ID:	Lab	Control	Sample	
			Prep	Type:	Total/NA	

Prep Batch: 44144

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	748.3		mg/Kg		75	70 - 130	 
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	737.5		mg/Kg		74	70 - 130	
C10-C28)								

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Client: Ensolum Job ID: 890-3886-1 SDG: 03A1987013 Project/Site: EP USA 5

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

Lab Sample ID: LCS 880-44144/2-A

**Matrix: Solid** 

**Analysis Batch: 44408** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 44144

LCS LCS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 121 70 - 130 o-Terphenyl 118 70 - 130

Lab Sample ID: LCSD 880-44144/3-A

Lab Sample ID: 890-3840-A-1-E MS

**Matrix: Solid** 

**Analysis Batch: 44408** 

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

**Prep Type: Total/NA** 

Prep Batch: 44144

LCSD LCSD %Rec **RPD** Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 1000 704.0 mg/Kg 70 70 - 130 6 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 759.5 mg/Kg 76 70 - 130 3 20

C10-C28)

**Matrix: Solid** 

**Analysis Batch: 44408** 

LCSD LCSD

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 101 70 - 130 70 - 130 o-Terphenyl 98

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Prep Batch: 44144

%Rec

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Limits **Analyte** Unit D %Rec <49.9 U Gasoline Range Organics 998 874.6 mg/Kg 88 70 - 130 (GRO)-C6-C10 998 Diesel Range Organics (Over <49.9 U 752.1 mg/Kg 71 70 - 130

C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 94 69 S1o-Terphenyl 70 - 130

Lab Sample ID: 890-3840-A-1-F MSD

**Matrix: Solid** 

**Analysis Batch: 44408** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA Prep Batch: 44144

%Rec **RPD** Limits **RPD** Limit

Result Qualifier Added Result Qualifier **Analyte** Unit %Rec Gasoline Range Organics <49.9 U 997 853.1 86 70 - 130 2 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 997 776.7 mg/Kg 73 70 - 130 3 20

MSD MSD

Spike

C10-C28)

MSD MSD

Sample Sample

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 98 70 - 130 o-Terphenyl 73 70 - 130

Job ID: 890-3886-1

SDG: 03A1987013

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44367/1-A

Client Sample ID: Method Blank

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Analysis Batch: 44405** 

Client: Ensolum

**Matrix: Solid** 

Project/Site: EP USA 5

MB MB Result Qualifier RL **MDL** Unit Analyzed Dil Fac D Prepared

Analyte 5.00 01/20/23 00:05 Chloride <5.00 U mg/Kg

Lab Sample ID: LCS 880-44367/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 44405** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 272.8 90 - 110 mg/Kg 109

Lab Sample ID: LCSD 880-44367/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 44405** 

Spike LCSD LCSD %Rec **RPD** Added Result Qualifier Limits **RPD** Limit Analyte Unit %Rec Chloride 250 273.9 90 - 110 mg/Kg

Lab Sample ID: 880-23914-A-31-B MS **Client Sample ID: Matrix Spike Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 44405** 

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 78.5 F1 250 363.9 F1 mg/Kg 114 90 - 110

Lab Sample ID: 880-23914-A-31-C MSD

**Matrix: Solid** 

**Analysis Batch: 44405** 

MSD MSD RPD Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit Limits RPD Limit %Rec Chloride 78.5 F1 250 370.3 F1 117 20 mg/Kg 90 - 110

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-3886-1

 Project/Site: EP USA 5
 SDG: 03A1987013

#### **GC VOA**

#### Prep Batch: 44393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3886-1	SW05	Total/NA	Solid	5035	
MB 880-44393/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### **Analysis Batch: 44418**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3886-1	SW05	Total/NA	Solid	8021B	44393
MB 880-44393/5-A	Method Blank	Total/NA	Solid	8021B	44393
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	8021B	44393
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	44393
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	44393
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	44393

## **Analysis Batch: 44556**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3886-1	SW05	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 44144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3886-1	SW05	Total/NA	Solid	8015NM Prep	<u> </u>
MB 880-44144/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-44144/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-44144/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3840-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3840-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 44408**

<b>Lab Sample ID</b> 890-3886-1	Client Sample ID SW05	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 44144
MB 880-44144/1-A	Method Blank	Total/NA	Solid	8015B NM	44144
LCS 880-44144/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	44144
LCSD 880-44144/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	44144
890-3840-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	44144
890-3840-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	44144

#### **Analysis Batch: 44545**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3886-1	SW05	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 44367

Released to Imaging: 3/21/2023 2:21:21 PM

<b>Lab Sample ID</b> 890-3886-1	Client Sample ID SW05	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-44367/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44367/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44367/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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## **QC Association Summary**

Client: Ensolum Job ID: 890-3886-1 Project/Site: EP USA 5 SDG: 03A1987013

## **HPLC/IC (Continued)**

#### Leach Batch: 44367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-23914-A-31-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-23914-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 44405**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3886-1	SW05	Soluble	Solid	300.0	44367
MB 880-44367/1-A	Method Blank	Soluble	Solid	300.0	44367
LCS 880-44367/2-A	Lab Control Sample	Soluble	Solid	300.0	44367
LCSD 880-44367/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44367
880-23914-A-31-B MS	Matrix Spike	Soluble	Solid	300.0	44367
880-23914-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44367

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### **Lab Chronicle**

Client: Ensolum Job ID: 890-3886-1 Project/Site: EP USA 5 SDG: 03A1987013

**Client Sample ID: SW05** Lab Sample ID: 890-3886-1 Date Collected: 01/17/23 08:50

**Matrix: Solid** 

Date Received: 01/19/23 11:42

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	44393	01/19/23 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44418	01/20/23 14:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44556	01/23/23 12:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			44545	01/23/23 11:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	44144	01/20/23 10:42	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44408	01/20/23 12:40	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	44367	01/19/23 14:46	KS	EET MID
Soluble	Analysis	300.0		5			44405	01/20/23 11:44	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: 890-3886-1

 Project/Site: EP USA 5
 SDG: 03A1987013

## **Laboratory: Eurofins Midland**

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

Authority		ogram	Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-22-25	06-30-23
The following analyte	s are included in this reno	ort but the laboratory is r	not certified by the governing authority.	This list may include analytee for w
the agency does not	•	ort, but the laboratory is i	lot certified by the governing authority.	This list may include analytes for w
	•	Matrix	Analyte	This list may include analytes for w
the agency does not	offer certification.	•		This list may include analytes for w

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## **Method Summary**

Client: Ensolum Project/Site: EP USA 5 Job ID: 890-3886-1 SDG: 03A1987013

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: EP USA 5

Job ID: 890-3886-1

SDG: 03A1987013

Lab Sample ID Client Sample ID Matrix Collected Received Depth 890-3886-1 SW05 01/17/23 08:50 01/19/23 11:42 0 - 4 Solid

eurofins

**Environment Testing** 

City, State ZIP:

Carlsbad, NM 88220 3122 National Parks HWY

City, State ZIP:

Carlsbad, NM 88220 5315 Buena Vista Dr. Company Name Bill to: (if different)

> Jim Raley WPX

Project Manager: Company Name:

Joseph Hernandez

Ensolum

# **Chain of Custody**

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

Work Order No:

www.xenco.com <sup>2</sup> age 1 of 1
 Work Order Comments
Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II  Level III  PST/UST TRRP Level IV

Desired Date: 082552020 Desired 2020 2			0						
			4	1		1			
			23/1402	8.01		1	Y) ARI	II.	reduce Konon the
Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time F	D		Received by: (Signature	Receive	nature)	Relinquished by: (Signature)
	s. It assigns standard terms and conditions are due to circumstances beyond the control ms will be enforced unless previously negotiated.	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$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.	oany to Eurofins Xenco, osses or expenses incur bmitted to Eurofins Xenc	for any lo ample sul	se order from cl ny responsibility of \$5 for each s	stitutes a valid purcha d shall not assume a project and a charge	of samples cons t of samples and applied to each	nt and relinquishment is liable only for the cost arge of \$85.00 will be	otice: Signature of this docume service. Eurofins Xenco will b Eurofins Xenco. A minimum c
7470 / 7471	TI U Hg: 1631 / 245.1 / 7470	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	As Ba Be Cd C	RA Sb	6010: 8RCF	TCLP / SPLP 6010: 8RCRA	zed	tal(s) to be analy	Circle Method(s) and Metal(s) to be analyzed
⊺I Sn U V Zn	Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn	Ca Cr Co Cu Fe Pb Mg	As Ba Be B Cd	Al Sb	Texas 11 /	BRCRA 13PPM	8R	200.8 / 6020:	Total 200.7 / 6010
				+					
						\	1		
					/				
			\	/G		-			
NMAP1826970471	Z		181205						
Incident Numbers	In		5	+					
			<b>-</b>	+	0	0.00	01.17.23	0	20405
			Y			0.50	01 17 22	0	COMIS
Sample Comments	Sa		TPH (80	CHLOR	Grab/ Comp	Time Depth	Date Sampled	on Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC	NaCH+A		)15)	IDE	2		Corrected Temperature:		Total Containers:
Zn Acetate+NaOH: Zn	Zn Aceta	Control of Control		S /E	6.6		Temperature Reading:	Yes No WIA	Sample Custody Seals:
3. NaSO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> . NaSO <sub>3</sub>	890-3886 Chain of Custody			0	actor:	Correction Factor:	Yes No NA	Cooler Custody Seals:
NABIS	NaHSO4 NABIS				00	FID: NULOO	Thermometer ID:	Yas No	Samples Received Intact:
퓨	H <sub>3</sub> PO <sub>4</sub> : HP			nete	Yes No	Wet Ice:	Pas No	Temp Blank:	SAMPLE RECEIPT
H <sub>2</sub> NaOH: Na	H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub>			ers	by 4:30pm	the lab, if received by 4:30pm		1061232001	CC#
	I I HCL: HC				received by	TAT starts the day received by	onan	Yocoly Edyte Konan	Sampler's Name:
	Cool: Cool				24H TAT	Due Date: /2		Eddy County, NM	Project Location:
IO DI Water: H <sub>2</sub> O	None: NO			Code	Aush Co	✓ Routine		03A1987013	Project Number:
Preservative Codes	Pre	ANALYSIS REQUEST		0		Turn Around		EP USA 5	Project Name:
Care	ACAT [	vn.com Deliverables: EDD L	Email: jhernandez@ensolum.com, jim.raley@dvn.com	solum.	nandez@en	Email: jher		281-702-2329	Phone: 281-
242	ADSET []								

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3886-1

SDG Number: 03A1987013

Login Number: 3886 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: 890-3886-1

SDG Number: 03A1987013

List Source: Eurofins Midland
List Number: 2
List Creation: 01/20/23 10:42 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: Devon Team

Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 1/27/2023 7:53:56 AM Revision 1

## **JOB DESCRIPTION**

EP USA 5 SDG NUMBER 03A1987013

## **JOB NUMBER**

890-3889-1

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 1/27/2023 7:53:56 AM Revision 1

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

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

Page 2 of 20

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Client: Ensolum
Project/Site: EP USA 5
Laboratory Job ID: 890-3889-1
SDG: 03A1987013

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3889-1 Project/Site: EP USA 5 SDG: 03A1987013

**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, low biased. U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

**Glossary** 

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

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

Duplicate Error Ratio (normalized absolute difference) **DER** 

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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) Minimum Detectable Concentration (Radiochemistry) MDC

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

**Practical Quantitation Limit PQL** 

**PRES** Presumptive QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RI Reporting Limit or Requested Limit (Radiochemistry)

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

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

**TNTC** Too Numerous To Count

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#### Case Narrative

Client: Ensolum

Project/Site: EP USA 5

Job ID: 890-3889-1
SDG: 03A1987013

Job ID: 890-3889-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3889-1

#### **REVISION**

The report being provided is a revision of the original report sent on 1/23/2023. The report (revision 1) is being revised due to Per client email, requesting sample ID correction from SW04 to SW07.

Report revision history

#### Receipt

The sample was received on 1/19/2023 11:42 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 5.4°C

#### **Receipt Exceptions**

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): SW07 (890-3889-1). The container labels list <SAMPLE\_ID>, while the COC lists <SAMPLEID>. The client was contacted, and the lab was instructed to <EXPLANATION\_REQUIRED>.

890-3889

JAR

EP USA 5

WPX

SW07 1-17-23 0-4 9:50

COC

**EP USA** 

**WPX** 

SW04 1-17-23 0-4 9:50

BASED OFF THE TIME, DATE, DEPTH, INFO, THIS IS THE SAME SAMPLE

TALKED TO CLIENT YOCOLY AT 1:38 SAME SAMPLE

#### **GC VOA**

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

#### GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (890-3840-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-44367 and analytical batch 880-44405 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.

1

Eurofins Carlsbad 1/27/2023 (Rev. 1) Job ID: 890-3889-1

Client: Ensolum Project/Site: EP USA 5 SDG: 03A1987013

**Client Sample ID: SW07** Lab Sample ID: 890-3889-1 Date Collected: 01/17/23 09:50 **Matrix: Solid** Date Received: 01/19/23 11:42

Sample Depth: 0 - 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/19/23 16:39	01/20/23 15:16	1
Toluene	< 0.00201	U	0.00201		mg/Kg		01/19/23 16:39	01/20/23 15:16	1
Ethylbenzene	< 0.00201	U	0.00201		mg/Kg		01/19/23 16:39	01/20/23 15:16	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/19/23 16:39	01/20/23 15:16	1
o-Xylene	< 0.00201	U	0.00201		mg/Kg		01/19/23 16:39	01/20/23 15:16	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/19/23 16:39	01/20/23 15:16	,
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	103		70 - 130				01/19/23 16:39	01/20/23 15:16	-
1,4-Difluorobenzene (Surr)	114		70 - 130				01/19/23 16:39	01/20/23 15:16	•
Method: TAL SOP Total BTEX	. Total BTE	X Calculat	ion						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			01/23/23 12:52	
	_	•	DRO) (GC)						
Method: SW846 8015 NM - Did Analyte	Result	Qualifier	RL	MDL	Unit	<u>D</u>	Prepared	Analyzed	
	_	Qualifier	, , ,	MDL		<u>D</u>	Prepared	Analyzed 01/23/23 11:26	
Analyte	Result <50.0	Qualifier U Organics	<b>RL</b> 50.0	MDL	Unit	<u>D</u>	Prepared		
Analyte Total TPH  Method: SW846 8015B NM - E Analyte	Result <50.0  Piesel Range Result	Qualifier U Organics Qualifier	<b>RL</b> 50.0	MDL	Unit mg/Kg	<u>D</u>	Prepared Prepared		
Analyte Total TPH  Method: SW846 8015B NM - Description of the superior of the	Result <50.0	Qualifier U Organics Qualifier	RL 50.0 (DRO) (GC)		Unit mg/Kg	_ =	· ·	01/23/23 11:26 Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <50.0  Piesel Range Result	Qualifier U  Organics Qualifier U	70.0 (DRO) (GC) RL		Unit mg/Kg	_ =	Prepared	01/23/23 11:26  Analyzed 01/20/23 13:25	Dil Fa
Analyte Total TPH  Method: SW846 8015B NM - December 2015 Analyte Gasoline Range Organics (GRO)-C6-C10	Result <50.0  Diesel Range Result <50.0	Qualifier U  Organics Qualifier U	RL 50.0 (GC) RL 50.0		Unit mg/Kg  Unit mg/Kg	_ =	Prepared 01/20/23 10:42	01/23/23 11:26  Analyzed 01/20/23 13:25 01/20/23 13:25	Dil Fac
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 <50.0  Ciesel Range Result <50.0  <50.0	Qualifier U  Organics Qualifier U  U	RL 50.0 (GC) RL 50.0 50.0		Unit mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 01/20/23 10:42 01/20/23 10:42	01/23/23 11:26  Analyzed 01/20/23 13:25 01/20/23 13:25	Dil Fac
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   <50.0	Qualifier U  Organics Qualifier U  U	RL 50.0  (DRO) (GC) RL 50.0  50.0		Unit mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared	01/23/23 11:26  Analyzed 01/20/23 13:25 01/20/23 13:25 01/20/23 13:25 Analyzed	Dil Fac
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   <50.0	Qualifier U  Organics Qualifier U  U	RL 50.0  (DRO) (GC) RL 50.0  50.0  Limits		Unit mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared 01/20/23 10:42	01/23/23 11:26  Analyzed 01/20/23 13:25 01/20/23 13:25 01/20/23 13:25 Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - December 2015 Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result   <50.0	Qualifier U  Organics Qualifier U  U  U  Qualifier	RL 50.0 (DRO) (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130		Unit mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared 01/20/23 10:42	Analyzed 01/20/23 13:25 01/20/23 13:25 01/20/23 13:25  Analyzed 01/20/23 13:25	Dil Fac
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   <50.0	Qualifier U  Organics Qualifier U  U  U  Qualifier	RL 50.0 (DRO) (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130		Unit mg/Kg  Unit mg/Kg mg/Kg mg/Kg	_ =	Prepared 01/20/23 10:42 01/20/23 10:42 01/20/23 10:42 Prepared 01/20/23 10:42	Analyzed 01/20/23 13:25 01/20/23 13:25 01/20/23 13:25  Analyzed 01/20/23 13:25	Dil Fac

## **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-3889-1

 Project/Site: EP USA 5
 SDG: 03A1987013

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

Matrix: Solid Prep Type: Total/NA

			Percei	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-23936-A-1-A MS	Matrix Spike	97	114	
880-23936-A-1-B MSD	Matrix Spike Duplicate	95	114	
890-3889-1	SW07	103	114	
LCS 880-44393/1-A	Lab Control Sample	97	113	
LCSD 880-44393/2-A	Lab Control Sample Dup	92	111	
MB 880-44393/5-A	Method Blank	95	110	
Surrogate Legend				
BFB = 4-Bromofluorob	enzene (Surr)			
DFBZ = 1,4-Difluorobe	nzene (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)	
890-3840-A-1-E MS	Matrix Spike	94	69 S1-	
890-3840-A-1-F MSD	Matrix Spike Duplicate	98	73	
890-3889-1	SW07	88	81	
LCS 880-44144/2-A	Lab Control Sample	121	118	
LCSD 880-44144/3-A	Lab Control Sample Dup	101	98	
MB 880-44144/1-A	Method Blank	111	103	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

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4 6

40

13

Client: Ensolum Job ID: 890-3889-1
Project/Site: EP USA 5 SDG: 03A1987013

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

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 44393

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

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95	70 - 130	01/19/23 16:39	01/20/23 12:04	1
1,4-Difluorobenzene (Surr)	110	70 - 130	01/19/23 16:39	01/20/23 12:04	1

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 44393

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Benzene 70 - 130 0.100 0.09599 mg/Kg 96 Toluene 0.100 mg/Kg 91 70 - 130 0.09139 Ethylbenzene 0.100 0.08837 mg/Kg 88 70 - 130 0.200 90 m-Xylene & p-Xylene 0.1809 mg/Kg 70 - 130 o-Xylene 0.100 0.08607 mg/Kg 86 70 - 130

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	113		70 - 130

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

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

Prep Type: Total/NA Prep Batch: 44393

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

LCSD LCSD

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

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

**Matrix: Solid** 

**Analysis Batch: 44418** 

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

Prep Batch: 44393

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00198	U	0.0998	0.09771		mg/Kg		98	70 - 130	
Toluene	<0.00198	U	0.0998	0.09186		mg/Kg		92	70 - 130	

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12

## **QC Sample Results**

Client: Ensolum Job ID: 890-3889-1 Project/Site: EP USA 5 SDG: 03A1987013

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

Lab Sample ID: 880-23936-A-1-A MS Client Sample ID: Matrix Spike **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 44418** Prep Batch: 44393

Limits
70 - 130
70 - 130
70 - 130

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

Lab Sample ID: 880-23936-A-1-B MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 44418** 

o-Xylene

Prep Batch: 44393 Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene <0.00198 U 0.100 0.09615 mg/Kg 96 70 - 130 2 35 Toluene <0.00198 U 0.100 0.08993 90 70 - 130 2 35 mg/Kg <0.00198 U Ethylbenzene 0.100 0.08612 mg/Kg 86 70 - 130 5 35 m-Xylene & p-Xylene <0.00396 U 0.200 0.1753 mg/Kg 87 70 - 130 6 35

0.08306

0.100

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

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

<0.00198 U

Lab Sample ID: MB 880-44144/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA Prep Batch: 44144 **Analysis Batch: 44408** 

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/17/23 10:42	01/20/23 08:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/17/23 10:42	01/20/23 08:13	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/17/23 10:42	01/20/23 08:13	1

	MB MB				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111	70 - 130	01/17/23 10:42	01/20/23 08:13	1
o-Terphenyl	103	70 - 130	01/17/23 10:42	01/20/23 08:13	1

Lab Sample ID: LCS 880-44144/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Total/NA Analysis Batch: 44408** Prep Batch: 44144 LCS LCS Spike %Rec

Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	748.3	mg/Kg	_	75	70 - 130
(GRO)-C6-C10						
Diesel Range Organics (Over	1000	737.5	mg/Kg		74	70 - 130
C10-C28)						

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83

mg/Kg

70 - 130

Client: Ensolum Job ID: 890-3889-1 Project/Site: EP USA 5

SDG: 03A1987013

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

100 100

Lab Sample ID: LCS 880-44144/2-A

**Analysis Batch: 44408** 

**Matrix: Solid** 

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

70

76

Client Sample ID: Matrix Spike Duplicate

mg/Kg

mg/Kg

70 - 130

70 - 130

Prep Batch: 44144

6

3

Prep Batch: 44144

	LUS LUS	•
Surrogate	%Recovery Qua	lifier Limits
1-Chlorooctane	121	70 - 130
o-Terphenyl	118	70 - 130

Lab Sample ID: LCSD 880-44144/3-A **Client Sample ID: Lab Control Sample Dup** 

Matrix: Solid					Prep Ty	ype: Tot	al/NA
Analysis Batch: 44408					Prep	Batch: 4	44144
	Spike	LCSD LCSD			%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D %Rec	Limits	RPD	Limit

704.0

759.5

1000

1000

Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over

C10-C28)

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Ternhenyl	98		70 - 130

Lab Sample ID: 890-3840-A-1-E MS **Client Sample ID: Matrix Spike Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 44408** 

_	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	998	874.6		mg/Kg		88	70 - 130	
(GRO)-C6-C10 Diesel Range Organics (Over	<49.9	U	998	752.1		mg/Kg		71	70 - 130	

C10-C28)

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	69	S1-	70 - 130

Lab Sample ID: 890-3840-A-1-F MSD

Matrix: Solid	Prep Type: Total/NA
Analysis Batch: 44408	Prep Batch: 44144

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec Gasoline Range Organics <49.9 U 997 853.1 86 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 997 776.7 mg/Kg 73 70 - 130 20

C10-C28)

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenvl	73		70 - 130

**Eurofins Carlsbad** 

20

Dil Fac

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

%Rec

Limits

90 - 110

%Rec

Limits

%Rec

Limits

90 - 110

90 - 110

**Client Sample ID: Matrix Spike** 

Analyzed

01/20/23 00:05

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**RPD** 

**Prep Type: Soluble** 

## QC Sample Results

Spike

Added

250

Spike

Added

Spike

Added

250

250

Client: Ensolum Job ID: 890-3889-1 Project/Site: EP USA 5 SDG: 03A1987013

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-44367/1-A

**Matrix: Solid Analysis Batch: 44405** 

MB MB

Analyte Result Qualifier RL 5.00 Chloride <5.00 U

Lab Sample ID: LCS 880-44367/2-A **Matrix: Solid** 

**Analysis Batch: 44405** 

Analyte

Chloride

Lab Sample ID: LCSD 880-44367/3-A **Matrix: Solid** 

**Analysis Batch: 44405** 

Analyte

Lab Sample ID: 880-23914-A-31-B MS

**Matrix: Solid** 

Chloride

**Analysis Batch: 44405** 

Analyte Result Qualifier Chloride 78.5 F1

Lab Sample ID: 880-23914-A-31-C MSD

**Matrix: Solid** 

**Analysis Batch: 44405** 

Analyte Result Qualifier Chloride

Sample Sample 78.5 F1 250

Sample Sample

Spike Added

MSD MSD Result Qualifier 370.3 F1

**MDL** Unit

LCS LCS

LCSD LCSD

MS MS

363.9 F1

Result Qualifier

Result Qualifier

272.8

273.9

Result Qualifier

mg/Kg

Unit

Unit

Unit

mg/Kg

mg/Kg

mg/Kg

D

Prepared

D %Rec

109

%Rec

%Rec

114

Client Sample ID: Lab Control Sample Dup

Unit mg/Kg

%Rec

Limits 117 90 - 110

**Client Sample ID: Matrix Spike Duplicate** 

%Rec RPD Limit 20

**Prep Type: Soluble** 

**Eurofins Carlsbad** 

**RPD** 

Limit

RPD

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-3889-1

 Project/Site: EP USA 5
 SDG: 03A1987013

#### **GC VOA**

#### Prep Batch: 44393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3889-1	SW07	Total/NA	Solid	5035	
MB 880-44393/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## **Analysis Batch: 44418**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3889-1	SW07	Total/NA	Solid	8021B	44393
MB 880-44393/5-A	Method Blank	Total/NA	Solid	8021B	44393
LCS 880-44393/1-A	Lab Control Sample	Total/NA	Solid	8021B	44393
LCSD 880-44393/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	44393
880-23936-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	44393
880-23936-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	44393

#### **Analysis Batch: 44558**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3889-1	SW07	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 44144

<b>Lab Sample ID</b> 890-3889-1	Client Sample ID SW07	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-44144/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-44144/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-44144/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3840-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3840-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 44408**

<b>Lab Sample ID</b> 890-3889-1	Client Sample ID SW07	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 44144
MB 880-44144/1-A	Method Blank	Total/NA	Solid	8015B NM	44144
LCS 880-44144/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	44144
LCSD 880-44144/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	44144
890-3840-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	44144
890-3840-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	44144

#### Analysis Batch: 44547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3889-1	SW07	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 44367

Released to Imaging: 3/21/2023 2:21:21 PM

<b>Lab Sample ID</b> 890-3889-1	Client Sample ID SW07	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-44367/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-44367/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-44367/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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## **QC Association Summary**

Client: Ensolum Job ID: 890-3889-1 Project/Site: EP USA 5 SDG: 03A1987013

## **HPLC/IC (Continued)**

#### Leach Batch: 44367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-23914-A-31-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-23914-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 44405**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3889-1	SW07	Soluble	Solid	300.0	44367
MB 880-44367/1-A	Method Blank	Soluble	Solid	300.0	44367
LCS 880-44367/2-A	Lab Control Sample	Soluble	Solid	300.0	44367
LCSD 880-44367/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	44367
880-23914-A-31-B MS	Matrix Spike	Soluble	Solid	300.0	44367
880-23914-A-31-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	44367

**Eurofins Carlsbad** 

#### **Lab Chronicle**

 Client: Ensolum
 Job ID: 890-3889-1

 Project/Site: EP USA 5
 SDG: 03A1987013

Client Sample ID: SW07

Lab Sample ID: 890-3889-1

Date Collected: 01/17/23 09:50

Date Received: 01/19/23 11:42

Matrix: Solid

	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	44393	01/19/23 16:39	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	44418	01/20/23 15:16	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			44558	01/23/23 12:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			44547	01/23/23 11:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	44144	01/20/23 10:42	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	44408	01/20/23 13:25	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	44367	01/19/23 14:46	KS	EET MID
Soluble	Analysis	300.0		5			44405	01/20/23 11:57	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: 890-3889-1

 Project/Site: EP USA 5
 SDG: 03A1987013

## **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 analyte	s are included in this reno	ort but the laboratory is r	not certified by the governing authority.	This list may include analytee for w
the agency does not	•	ort, but the laboratory is i	lot certified by the governing authority.	This list may include analytes for w
	•	Matrix	Analyte	This list may include analytes for w
the agency does not	offer certification.	•		This list may include analytes for w

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## **Method Summary**

Client: Ensolum Project/Site: EP USA 5 Job ID: 890-3889-1 SDG: 03A1987013

rotocol	Laboratory
W846	EET MID
AL SOP	EET MID
	LLT MID
W846	EET MID
W846	EET MID
CAWW	EET MID

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

#### **Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### **Laboratory References:**

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

# **Sample Summary**

Client: Ensolum

Project/Site: EP USA 5

Job ID: 890-3889-1

SDG: 03A1987013

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Depth

 890-3889-1
 SW07
 Solid
 01/17/23 09:50
 01/19/23 11:42
 0 - 4

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eurofins :

Xenco

**Environment Testing** 

Company Name:

Ensolum

Joseph Hernandez

Bill to: (If different)
Company Name:

Jim Raley

WPX

3122 National Parks HWY Carlsbad, NM 88220

City, State ZIP:

Carlsbad, NM 88220

5315 Buena Vista Dr

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# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3189

Work Order No:

	www.xenco.com	
	Work Order Comments	
لـــــا	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
	State of Project:	
	Reporting: Level II  Level III  PST/UST TRRP Level IV	

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	otice: 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 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 to control the control of the control	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	and the second					SW04	Sample Identification	Total Containers:	Sample Custody Seals: Yes No	Cooler Custody Seals: Yes No	Samples Received Intact: Yes	SAMPLE RECEIPT Temp Blank:	CC #: 1061		Project Location: Eddy C	Project Number: 03A1	Project Name: EP	Phone: 281-702-2329	ly, Clare Lil . Callebur,
) Receiv	ishment of samples co or the cost of samples 00 will be applied to eac							S 01.17.23	Matrix Sampled	Corrected	NIA	N/A Correction Factor:	No Thermometer ID:	lank: (xes)No	1061232001	Yocoly Edyte Konan	Eddy County, NM	03A1987013	EP USA 5		CTAC
Beceived by: (Signature)	nstitutes a valid purchase order and shall not assume any respon ch project and a charge of \$5 for	8RCRA 13PPM Texas 11 Al Sb As Ba Be TCLP/SPLP 6010: 8RCRA Sb As Ba Be		A Comment of the Comm	The state of the s			9:50 0-4' Cc	Time Depth	Corrected Temperature: 5,4	Temperature Reading: 5.6	Factor: -O o	eter ID: Knoch	Wet Ice: Yes No	the lab, if received by 4:30pm	TAT starts the day received to	Due Date: 24H TA	Routine Rush	Turn Around	Email: hernandez@ensolum.com, jim.raley@dvn.com	100
Date/Time	from client company to isibility for any losses of each sample submitte	11 AI Sb As E 8RCRA Sb As			1			Comp 2 X	Grab/ # of Grab/ Comp Cont CHL		S (EI	P	arar	nete	<u> </u>	4		Con.	5	@ensolum.com,	
	Eurofins Xenco, its a or expenses incurred d to Eurofins Xenco, t	3a Be B Cd Ca Ba Be Cd Cr C				-8/10		×	TPH (80											jim.raley@dvn.o	
Relinquished by: (Signature)	affiliates and subcontractors. It ass by the client if such losses are due but not analyzed. These terms will b	Cr Co Cu Fe Pb				6,40°C				890-3889 Chain of Custody							_		ANALYSIS REQUEST		
Received by: (Signature)	It assigns standard terms and conditions ad the control will be enforced unless previously negotiated.	K Se								JSlody					_					Deliverables: EDD	]
Signature) Date/Time	ditions control negotiated.	Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn Hg: 1631/245.1/7470/7471				NMAP1826970471	Incident Numbers		Sample Comments	NaOH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	NaHSO <sub>4</sub> : NABIS	H₃PO₄: HP	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na	HCL: HC HNO3: HN	Cool: Cool MeOH: Me	None: NO DI Water: H <sub>2</sub> O	Preservative Codes	ADaPT LJ Other:	

Revised Date: 08/25/2020 Rev. 2020.2

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3889-1

SDG Number: 03A1987013

Login Number: 3889 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: 890-3889-1 SDG Number: 03A1987013

Login Number: 3889 **List Source: Eurofins Midland** List Creation: 01/20/23 10:42 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	
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").

**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Devon Team Ensolum

601 N. Marienfeld St.

Suite 400

Midland, Texas 79701

Generated 2/6/2023 11:18:15 AM

## **JOB DESCRIPTION**

EP USA 5 SDG NUMBER 03A1987013

# **JOB NUMBER**

890-3982-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220



# **Eurofins Carlsbad**

## **Job Notes**

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

## **Authorization**

Generated 2/6/2023 11:18:15 AM

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

Client: Ensolum
Project/Site: EP USA 5
Laboratory Job ID: 890-3982-1
SDG: 03A1987013

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#### **Definitions/Glossary**

Job ID: 890-3982-1 Client: Ensolum Project/Site: EP USA 5 SDG: 03A1987013

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

LCS and/or LCSD is outside acceptance limits, low biased.

\*1 LCS/LCSD RPD exceeds control limits.

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

Percent Recovery %R 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
 Job ID: 890-3982-1

 Project/Site: EP USA 5
 SDG: 03A1987013

Job ID: 890-3982-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3982-1

#### Receipt

The sample was received on 1/30/2023 2:17 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.0°C

#### **Receipt Exceptions**

The following sample was received and analyzed from an unpreserved bulk soil jar: SW06 (890-3982-1).

#### **GC VOA**

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

#### GC Semi VOA

Method 8015MOD\_NM: The laboratory control sample (LCS) associated with preparation batch 880-45400 and analytical batch 880-45483 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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

#### HPLC/IC

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

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Client: Ensolum Job ID: 890-3982-1 Project/Site: EP USA 5 SDG: 03A1987013

Lab Sample ID: 890-3982-1

**Client Sample ID: SW06** Date Collected: 01/30/23 10:08 Date Received: 01/30/23 14:17

Matrix: Solid

Sample Depth: 0-4'

Chloride

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		02/03/23 14:33	02/05/23 21:13	1
Toluene	<0.00198	U	0.00198		mg/Kg		02/03/23 14:33	02/05/23 21:13	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		02/03/23 14:33	02/05/23 21:13	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		02/03/23 14:33	02/05/23 21:13	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		02/03/23 14:33	02/05/23 21:13	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		02/03/23 14:33	02/05/23 21:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130				02/03/23 14:33	02/05/23 21:13	1
1,4-Difluorobenzene (Surr)	84		70 - 130				02/03/23 14:33	02/05/23 21:13	1
- Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			02/06/23 11:39	1
Method: SW846 8015 NM - Diese Analyte Total TPH	•	Qualifier	RL 49.9	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 02/06/23 10:40	Dil Fac
10tal 1PH - -	<49.9	U	49.9		mg/Kg			02/06/23 10:40	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *- *1	49.9		mg/Kg		02/03/23 13:52	02/05/23 15:11	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/03/23 13:52	02/05/23 15:11	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/03/23 13:52	02/05/23 15:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	73		70 - 130				02/03/23 13:52	02/05/23 15:11	1
o-Terphenyl	80		70 - 130				02/03/23 13:52	02/05/23 15:11	1
	Oh	h. Calubi	_						
Method: EPA 300.0 - Anions, Ion	Chromatograp	my - Solubi	e						

4.98

mg/Kg

236

02/03/23 20:58

## **Surrogate Summary**

Client: Ensolum Job ID: 890-3982-1 Project/Site: EP USA 5 SDG: 03A1987013

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Rec
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-24203-A-1-L MS	Matrix Spike	102	104	
880-24203-A-1-M MSD	Matrix Spike Duplicate	113	100	
890-3982-1	SW06	101	84	
LCS 880-45402/1-A	Lab Control Sample	94	108	
LCSD 880-45402/2-A	Lab Control Sample Dup	81	112	
MB 880-45402/5-A	Method Blank	76	93	
Surrogate Legend				
BFB = 4-Bromofluorobenz	zene (Surr)			
DFBZ = 1.4-Difluorobenze	ene (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)	
890-3979-A-1-H MS	Matrix Spike	84	85	
890-3979-A-1-I MSD	Matrix Spike Duplicate	90	90	
890-3982-1	SW06	73	80	
LCS 880-45400/2-A	Lab Control Sample	83	88	
LCSD 880-45400/3-A	Lab Control Sample Dup	83	89	
MB 880-45400/1-A	Method Blank	100	112	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3982-1 Project/Site: EP USA 5 SDG: 03A1987013

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-45402/5-A

**Matrix: Solid** Analysis Batch: 45524

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 45402

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/03/23 14:33	02/05/23 13:19	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/03/23 14:33	02/05/23 13:19	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/03/23 14:33	02/05/23 13:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/03/23 14:33	02/05/23 13:19	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/03/23 14:33	02/05/23 13:19	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/03/23 14:33	02/05/23 13:19	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76	70 - 130	02/03/23 14:33	02/05/23 13:19	1
1.4-Difluorobenzene (Surr)	93	70 <sub>-</sub> 130	02/03/23 14:33	02/05/23 13:19	1

Lab Sample ID: LCS 880-45402/1-A

Matrix: Solid

Analysis Batch: 45524

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 45402

	<b>Spike</b>	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1107		mg/Kg		111	70 - 130	
Toluene	0.100	0.09694		mg/Kg		97	70 - 130	
Ethylbenzene	0.100	0.09355		mg/Kg		94	70 - 130	
m-Xylene & p-Xylene	0.200	0.1876		mg/Kg		94	70 - 130	
o-Xylene	0.100	0.09162		mg/Kg		92	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	94		70 - 130		
1,4-Difluorobenzene (Surr)	108		70 - 130		

Lab Sample ID: LCSD 880-45402/2-A

**Matrix: Solid** 

Analysis Batch: 45524

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 45402

RPD LCSD LCSD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Limit Benzene 0.100 0.1288 mg/Kg 129 70 - 130 15 35 Toluene 0.100 0.1035 mg/Kg 104 70 - 130 35 Ethylbenzene 0.100 0.09460 mg/Kg 95 70 - 130 35 0.200 m-Xylene & p-Xylene 0.1848 mg/Kg 92 70 - 130 35 0.100 0.09047 70 - 130 o-Xylene mg/Kg 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	81		70 - 130
1.4-Difluorobenzene (Surr)	112		70 <sub>-</sub> 130

Lab Sample ID: 880-24203-A-1-L MS

**Matrix: Solid** 

Analysis Batch: 45524

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

Prep Batch: 45402

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U	0.0996	0.09296		mg/Kg		93	70 - 130	
Toluene	<0.00200	U	0.0996	0.08344		mg/Kg		84	70 - 130	

**Eurofins Carlsbad** 

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Prep Batch: 45402

Prep Type: Total/NA

Prep Batch: 45400

# QC Sample Results

Job ID: 890-3982-1 Client: Ensolum Project/Site: EP USA 5 SDG: 03A1987013

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

Lab Sample ID: 880-24203-A-1-L MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** Analysis Batch: 45524

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00200	U	0.0996	0.08079		mg/Kg		81	70 - 130	
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1695		mg/Kg		85	70 - 130	
o-Xylene	<0.00200	U	0.0996	0.08347		mg/Kg		83	70 - 130	

MS MS %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 102 1,4-Difluorobenzene (Surr) 70 - 130 104

Lab Sample ID: 880-24203-A-1-M MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Analysis Batch: 45524

Analysis Batch: 45524									Prep	Batch:	45402
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00200	U	0.0990	0.08716		mg/Kg		88	70 - 130	6	35
Toluene	<0.00200	U	0.0990	0.08358		mg/Kg		84	70 - 130	0	35
Ethylbenzene	<0.00200	U	0.0990	0.08553		mg/Kg		86	70 - 130	6	35
m-Xylene & p-Xylene	<0.00401	U	0.198	0.1810		mg/Kg		91	70 - 130	7	35
o-Xylene	<0.00200	U	0.0990	0.09245		mg/Kg		93	70 - 130	10	35

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

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

Lab Sample ID: MB 880-45400/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 45483

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/03/23 13:52	02/05/23 09:42	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/03/23 13:52	02/05/23 09:42	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/03/23 13:52	02/05/23 09:42	1

MB MB %Recovery Qualifier Limits Prepared Analyzed Dil Fac Surrogate 02/03/23 13:52 1-Chlorooctane 100 70 - 130 02/05/23 09:42 112 70 - 130 02/03/23 13:52 02/05/23 09:42 o-Terphenyl

Lab Sample ID: LCS 880-45400/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** Analysis Batch: 45483

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits 999 85 849 7 70 \_ 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 999 1053 mg/Kg 105 70 - 130

C10-C28)

**Eurofins Carlsbad** 

Prep Type: Total/NA

Prep Batch: 45400

Lab Sample ID: LCSD 880-45400/3-A

Limits

70 - 130

70 - 130

Job ID: 890-3982-1 SDG: 03A1987013

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

Lab Sample ID: LCS 880-45400/2-A

LCS LCS %Recovery Qualifier

83

88

**Matrix: Solid** 

Surrogate

o-Terphenyl

1-Chlorooctane

**Matrix: Solid** 

Client: Ensolum

Project/Site: EP USA 5

Analysis Batch: 45483

Analysis Batch: 45483

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 45400

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 45400

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 70 - 130 999 680.4 \*- \*1 68 22 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 999 995.7 100 mg/Kg 70 - 1306 20 C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	83		70 - 130
o-Terphenyl	89		70 - 130

Lab Sample ID: 890-3979-A-1-H MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 45483** 

Prep Type: Total/NA

Prep Batch: 45400

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<50.0	U *- *1	1000	948.1		mg/Kg		91	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<50.0	U	1000	1005		mg/Kg		99	70 - 130	
C10-C28)										

C10-C28)

	MS MS	3	
Surrogate	%Recovery Qu	ualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-3979-A-1-I MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** 

Analysis Batch: 45483

Prep Type: Total/NA

Prep Batch: 45400

	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 *- *1	998	985.3		mg/Kg		95	70 - 130	4	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	998	1080		mg/Kg		107	70 - 130	7	20
C10-C28)											

MSD MSD %Recovery Qualifier Limits Surrogate 1-Chlorooctane 90 70 - 130 90 70 - 130 o-Terphenyl

**Eurofins Carlsbad** 

Client: Ensolum Job ID: 890-3982-1 Project/Site: EP USA 5 SDG: 03A1987013

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-45276/1-A

**Matrix: Solid** 

Analysis Batch: 45421

Client Sample ID: Method Blank **Prep Type: Soluble** 

MB MB MDL Unit Analyte Result Qualifier RL D Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 mg/Kg 02/03/23 19:19

Lab Sample ID: LCS 880-45276/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 45421

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 273.0 mg/Kg 109 90 - 110

Lab Sample ID: LCSD 880-45276/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 45421

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 261.5 105 mg/Kg 90 - 110

Lab Sample ID: 890-3979-A-1-E MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 45421

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Qualifier %Rec Result Unit Limits 310.5 Chloride 40.2 251 108 90 - 110 mg/Kg

Lab Sample ID: 890-3979-A-1-F MSD

**Matrix: Solid** 

Analysis Batch: 45421

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 251 40.2 308.3 mg/Kg 107 90 - 110 20

**Eurofins Carlsbad** 

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-3982-1

 Project/Site: EP USA 5
 SDG: 03A1987013

**GC VOA** 

Prep Batch: 45402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Total/NA	Solid	5035	
MB 880-45402/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-45402/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-45402/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-24203-A-1-L MS	Matrix Spike	Total/NA	Solid	5035	
880-24203-A-1-M MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

# Analysis Batch: 45524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Total/NA	Solid	8021B	45402
MB 880-45402/5-A	Method Blank	Total/NA	Solid	8021B	45402
LCS 880-45402/1-A	Lab Control Sample	Total/NA	Solid	8021B	45402
LCSD 880-45402/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	45402
880-24203-A-1-L MS	Matrix Spike	Total/NA	Solid	8021B	45402
880-24203-A-1-M MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	45402

### Analysis Batch: 45578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

# Prep Batch: 45400

<b>Lab Sample ID</b> 890-3982-1	Client Sample ID SW06	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-45400/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-45400/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-45400/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3979-A-1-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3979-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 45483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Total/NA	Solid	8015B NM	45400
MB 880-45400/1-A	Method Blank	Total/NA	Solid	8015B NM	45400
LCS 880-45400/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	45400
LCSD 880-45400/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	45400
890-3979-A-1-H MS	Matrix Spike	Total/NA	Solid	8015B NM	45400
890-3979-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	45400

### Analysis Batch: 45564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Total/NA	Solid	8015 NM	

# HPLC/IC

### Leach Batch: 45276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Soluble	Solid	DI Leach	FIEP Batch
MB 880-45276/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-45276/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-45276/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

**Eurofins Carlsbad** 

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# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-3982-1

 Project/Site: EP USA 5
 SDG: 03A1987013

# **HPLC/IC** (Continued)

# Leach Batch: 45276 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3979-A-1-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3979-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 45421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3982-1	SW06	Soluble	Solid	300.0	45276
MB 880-45276/1-A	Method Blank	Soluble	Solid	300.0	45276
LCS 880-45276/2-A	Lab Control Sample	Soluble	Solid	300.0	45276
LCSD 880-45276/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	45276
890-3979-A-1-E MS	Matrix Spike	Soluble	Solid	300.0	45276
890-3979-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	45276

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# **Lab Chronicle**

Client: Ensolum Job ID: 890-3982-1 Project/Site: EP USA 5 SDG: 03A1987013

**Client Sample ID: SW06** 

Lab Sample ID: 890-3982-1 Date Collected: 01/30/23 10:08

Matrix: Solid

Date Received: 01/30/23 14:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	45402	02/03/23 14:33	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	45524	02/05/23 21:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			45578	02/06/23 11:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			45564	02/06/23 10:40	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	45400	02/03/23 13:52	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	45483	02/05/23 15:11	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	45276	02/02/23 15:16	KS	EET MID
Soluble	Analysis	300.0		1			45421	02/03/23 20:58	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: 890-3982-1

 Project/Site: EP USA 5
 SDG: 03A1987013

### **Laboratory: Eurofins Midland**

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

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

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**EET MID** 

ASTM

# **Method Summary**

 Client: Ensolum
 Job ID: 890-3982-1

 Project/Site: EP USA 5
 SDG: 03A1987013

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

### **Protocol References:**

DI Leach

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Deionized Water Leaching 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: EP USA 5

Job ID: 890-3982-1 SDG: 03A1987013

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Depth

 890-3982-1
 SW06
 Solid
 01/30/23 10:08
 01/30/23 14:17
 0-4'

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eurofins Xenco **Environment Testing** 

Company Name: Project Manager:

Ensolum

Company Name: Bill to: (if different)

5315 Buena Vista Dr. WPX Energy Jim Raley

Joseph Hernandez

3122 National Parks HWY

# Chain of Custody

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

Work Order No:

www.xenco.com Page 1 of 1
Work Order Comments
Program: UST/PST ☐ PRP☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II   Level III   PST/UST   TRRP   Level IV
Deliverables: EDD ☐ ADaPT ☐ Other:

City, State ZIP:	Carlsbad, NM 88220	220		Cit	City, State ZIP:		Carlsba	Carlsbad, NM 88220	88220	кероп	] rever III	
Phone: 8	832-541-7719			Email: jhe	jhernandez@ensolum.com, jim.raley@dvn.com	ensolur	n.com	ı jim.ra	lley@c		Deliverables. EDD [_] ADar : [_]	Carri
Project Name:	EP USA 5			Turn Around	ound					ANALYSIS REQUEST		Preservative Codes
9.7	03A1987013		R	Routine [	✓ Rush	Pres.					Non	None: NO DI Water: H <sub>2</sub> O
	Rural Eddy, NM		Due	Due Date:	24Hr TAT				_		Coo	Cool: Cool MeOH: Me
	Yocoly Edyte Konan	ian	TAT	starts the da	TAT starts the day received by						HCL	
	1061232001		the I	ab, if receive	the lab, if received by 4:30pm	s			_		H <sub>2</sub> S	H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub> NaOH: Na
SAMPLE RECEIPT	Temp Blank:	* (Va)	S O	Wet Ice:	Mes No	eter	))				Н₃Р	H <sub>3</sub> PO <sub>4</sub> ; HP
Samples Received Intact:	7		ometer ID	1		ram	00.0				Nat	NaHSO <sub>4</sub> : NABIS
Cooler Custody Seals:	Yes No	Correc	Correction Factor:		で、のへ	Pa	A: 3				Na <sub>2</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>
Sample Custody Seals:	Yes No	4	Temperature Reading	ng:	6.5		(EF				Zn £	Zn Acetate+NaOH: Zn
Total Containers:		Соптес	Corrected Temperature	ture:	0.5		DES	-	021		NaC	NaOH+Ascorbic Acid: SAPC
Sample Identification		Matrix Sampled		Time D	Depth Grab/	# of Cont	CHLORI	TPH (80	BTEX (8	890-3982 Chain of Custody		Sample Comments
SW06	0,	S 1/4	1/4/2023 10	10:08 0' - 4'	- 4' Comp	1	×	×	×			
		-		-				+	+			Incident ID
												NMAP1826970471
		+						-	-			
					H			$\perp \downarrow$				
Total 200.7 / 6010	10 200.8 / 6020:	0.	8RCRA	13PPM	Texas 11	Al Sb As Ba	As B	8	B Ω	Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K	Mo Ni K Se Ag SiO <sub>2</sub> Na Sr	r TI Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	d Metal(s) to be a	analyzed	TCI	P/SPLF	TCLP / SPLP 6010: 8RCRA Sb As	CRA (	Sb As	Ва В	e Cd	Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	Ag TI U Hg: 1631 / 245.1 / 7470	.1/7470/7471
Notice: Signature of this do of service. Eurofins Xenco of Eurofins Xenco. A minin	ocument and relinquish will be liable only for t num charge of \$85.00 v	ment of sample he cost of samp will be applied to	es constitutes a ples and shall no o each project a	valid purcha ot assume an	se order from c y responsibility of \$5 for each s	client com y for any l	pany to I osses or bmitted	Eurofins r expense to Eurofi	Xenco, i es incurr ins Xenc	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated	<ul> <li>the assigns standard terms and conditions are due to circumstances beyond the control ms will be enforced unless previously negotiated.</li> </ul>	
Relinquished by: (Signature)	(Signature)	Re	Received by: (Signature)	Signature	9)		Date/Time	Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Edyle Kenan	# 2	Jarrey	Sola	9.2	the state of	B-1	5C-(	2	412			
G C						T			0			
												Revised Date: 08/25/2020 Rev. 2020.2

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3982-1 SDG Number: 03A1987013

Login Number: 3982 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

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# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3982-1 SDG Number: 03A1987013

> List Source: Eurofins Midland List Creation: 02/03/23 01:00 PM

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 3982

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	

7

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13

14

<6mm (1/4").



# **APPENDIX E**

**Email Correspondence** 

# **Joseph Hernandez**

From: Anna Byers

**Sent:** Thursday, June 9, 2022 12:09 PM

To: ocd.enviro@state.nm.us; Morgan, Crisha A; 'CFO\_Spill, BLM\_NM'

**Cc:** jim.raley@dvn.com; Devon-Team

**Subject:** WPX Site Activity Update for Week of June 13, 2022

### Good afternoon,

WPX anticipates conducting final confirmation soil sampling activities at the following site between June 13 through June 17, 2022:

Site: RDX Federal 21 #044

API: 30-015-41193

Incident Number: nAPP2115533694

Site: RDX Federal 28 #011

API: 30-015-42109

Incident Number: nAPP2215732821

Site: EP USA #005 API: 30-015-25020

Incident Number: NMAP1826970471

# Thank you,



### **Erick Herrera**

From: Enviro, OCD, EMNRD < OCD.Enviro@emnrd.nm.gov>

Sent: Thursday, January 12, 2023 11:43 AM

To: Erick Herrera

Cc: Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD

Subject: RE: [EXTERNAL] WPX Site Sampling Activity Update (1/16 - 1/20)

### [ \*\*EXTERNAL EMAIL\*\*]

Erick,

Thank you for the notification. Please note that 01/16/2023 is a Holiday. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

### Jocelyn Harimon • Environmental Specialist

Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | <u>Jocelyn.Harimon@emnrd.nm.gov</u>

http://www.emnrd.nm.gov



From: Erick Herrera <eherrera@ensolum.com> Sent: Thursday, January 12, 2023 9:00 AM

To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; 'CFO Spill, BLM NM' <bl rowspan="2">Spill@blm.gov>

Cc: Raley, Jim <jim.raley@dvn.com>; Devon Team <Devon-Team@ensolum.com>

Subject: [EXTERNAL] WPX Site Sampling Activity Update (1/16 - 1/20)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good Afternoon,

WPX anticipates conducting confirmation soil sampling activities at the following sites between January 16 – January 20, 2023:

Site Name: Saragossa/Happy Valley Compressor Station

API: 30-015-31584

Incident Number: nJMW1229041186

Site Name: LVP SWD #001

API: 30-015-42234

Incident Number: nAPP2135033453

Site Name: EP USA #005

API: 30-015-25020

Incident Number: NMAP1826970471

Thank you,



### **Erick Herrera**

From: Enviro, OCD, EMNRD < OCD.Enviro@emnrd.nm.gov>

Sent: Monday, January 30, 2023 9:40 AM

To: Erick Herrera

Cc: Nobui, Jennifer, EMNRD; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD

**Subject:** RE: [EXTERNAL] WPX Site Sampling Activity Update (1/30 - 2/3)

### [ \*\*EXTERNAL EMAIL\*\*]

Erick,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

### Jocelyn Harimon • Environmental Specialist

Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | <u>Jocelyn.Harimon@emnrd.nm.gov</u>

http://www.emnrd.nm.gov



From: Erick Herrera <eherrera@ensolum.com> Sent: Thursday, January 26, 2023 11:27 AM

To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; 'CFO Spill, BLM NM' <bl rowspan="2">Spill@blm.gov>

Cc: Raley, Jim <jim.raley@dvn.com>; Devon Team <Devon-Team@ensolum.com>

Subject: [EXTERNAL] WPX Site Sampling Activity Update (1/30 - 2/3)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good Afternoon.

WPX anticipates conducting confirmation soil sampling activities at the following sites between January 30 – February 3, 2023:

Site Name: EP USA #005 API: 30-015-25020

Incident Number: NMAP1826970471

Site Name: North Brushy PW Line Incident Number: nAPP2231126594

Thank you,



From: Raley, Jim

To: Robert.hamlet@state.nm.us

Cc: <u>Devon-Team</u>

**Subject:** EP USA 5 -Extension Request

**Date:** Monday, December 12, 2022 4:05:41 PM

Attachments: <u>image001.png</u>

### [ \*\*EXTERNAL EMAIL\*\*]

Robert,

WPX Energy Permian, LLC (WPX) is requesting an extension to the current deadline for a closure report for the approved work plan required in 19.15.29.12.B.(1) NMAC at the EP USA #005.

An oil and produced water release was discovered on September 17, 2018 and assigned Incident Number NMAP1826970471. WPX submitted a remediation work plan that was subsequently approved by the NMOCD on September 19, 2022. Remediation and preparation activities have initiated but were temporarily suspended to coordinate with operational and reclamation activities at the Site. Remediation activities are anticipated to resume by the end of the December.

To provide enough time for remediation work and the completion of a closure report, WPX requests an extension of the deadline to **March 18, 2023.** 

Jim Raley | Environmental Professional - Permian Basin 5315 Buena Vista Dr., Carlsbad, NM 88220 C: (575)689-7597 | iim.raley@dvn.com



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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 196982

### **CONDITIONS**

Operator:	OGRID:
WPX Energy Permian, LLC	246289
Devon Energy - Regulatory	Action Number:
Oklahoma City, OK 73102	196982
	Action Type:
	[C-141] Release Corrective Action (C-141)

### CONDITIONS

-	Condition	Condition
Ву		Date
jnobui	Closure Report Approved. Please implement 19.15.29.13 NMAC when completing P&A.	3/21/2023