



December 22, 2022

**New Mexico Oil Conservation Division**

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

**Re: Revised Remediation Work Plan  
MCA 94  
Incident Number NAPP2212531906  
Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Maverick Natural Resources, LLC (Maverick), has prepared the following *Revised Remediation Work Plan (RRWP)* to document site assessment and soil sampling activities and provide supplemental information requested in the denial of the original *Remediation Work Plan (RWP)*, dated October 26, 2022. Maverick received the denial notice from the New Mexico Oil Conservation Division (NMOCD) on November 22, 2022. In the denial, NMOCD stated:

*Remediation Plan Denied. Please provide OCD information on how impacted soils at PH04 at 8 feet bgs will be addressed. Anything other than excavation requires prior OCD approval. OCD will require bottom/floor confirmation soil samples be collected at 4' to ensure chloride concentrations have not exceeded criteria. Please submit a revised Remediation Plan to the OCD portal by December 22, 2022.*

This RRWP confirms the plan for excavation of waste-containing soil in the top 4 feet as originally requested and specifies deeper excavation to address limited chloride impacts in the vicinity of PH04.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit P, Section 20, Township 17 South, Range 32 East, in Lea County, New Mexico (32.81441° N, 103.783172° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On April 28, 2022, a hole in a poly flowline resulted in the release of approximately 125 barrels (bbls) of produced water into the pasture where fluids pooled. Released fluids were not recovered. The previous operator, ConocoPhillips Company (COP), reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on May 5, 2022. The release was assigned Incident Number NAPP2212531906.

The previous operator, ConocoPhillips Company, sold the asset to Maverick on June 1, 2022. Field activities at the Site were postponed until the sale was complete.

---

## SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be between 50 feet and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well RA-12020-POD1, located approximately 3,290 feet southwest of the Site. The groundwater well has a reported depth to groundwater of 81 feet bgs and a total depth of 120 feet bgs. All wells used for depth to groundwater determination are presented on Figure 1. The referenced well record is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a wash out, located approximately 7,213 feet east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization presented in the October 26, 2022 RWP, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

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

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH is applied to the top 4 feet of the pasture area and lease road that was impacted by the release, per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation.

## SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On August 8, 2022, personnel completed a Site visit to evaluate the release extent based on information provided on the Form C-141 and visual observations. Seven preliminary soil samples (SS01 through SS07) were collected within the release extent at a depth of approximately 0.5 feet bgs. The preliminary soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad,

New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for soil samples SS01 through SS07 indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for soil samples SS01, SS03, SS05, and SS06 indicated chloride concentrations exceeded the reclamation requirement; therefore, delineation of waste-containing soil appeared warranted.

## **DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS**

Between October 3 and October 6, 2022, delineation activities were conducted at the Site to assess the vertical and lateral extent of waste-containing soil. Potholes PH01 through PH06 were advanced via track mounted backhoe within and around the release extent. The delineation potholes were advanced to a depth of approximately 12 feet bgs before encountering refusal. Discrete delineation soil samples were collected from each pothole at depths ranging from 1-foot to 12 feet bgs. Soil from the potholes was field screened for VOCs and chloride. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil samples were handled and analyzed as described above. The delineation soil sample locations are depicted on Figure 3.

Laboratory analytical results for the delineation soil samples PH01 through PH06, indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for the delineation soil samples collected from potholes indicated waste-containing soil is present within the top 4 feet of soil off pad. The laboratory analytical results are summarized on the attached Table 1 and the complete laboratory analytical reports are included in Appendix D.

## **PROPOSED REMEDIATION WORK PLAN**

As a result of the data presented in this RRWP, Maverick proposes excavation of waste-containing soil in the top 4 feet. Maverick requests approval to complete the following remediation activities:

- Maverick will excavate soil in the top 4 feet of the subsurface containing chloride concentrations exceeding 600 mg/kg. Excavation will proceed laterally until sidewall samples indicated chloride concentrations are compliant with the reclamation requirement. Confirmation samples will be collected from the sidewalls and floor of the final excavation extent.
- Due to the estimated 12,500 square foot size of the excavation, Maverick requests a variance for frequency of excavation confirmation samples. Maverick proposes the frequency of confirmation sampling for the excavation floor to be decreased from every 200 square feet (approximately 63 samples) to every 400 square feet (approximately 32 samples). Each 5-point composite floor sample will represent a 400 square foot area. Sidewalls will be collected at a frequency of every 200 square feet. The 5-point composite samples will be collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation samples will be analyzed for chloride only since delineation samples did not contain BTEX or TPH exceeding Site Closure Criteria or the reclamation requirement.
- The proposed excavation will also include any soil deeper than 4 feet exceeding Site Closure Criteria including soil near PH04 between 4 and 12 feet bgs.

- An estimated 1,900 cubic yards of impacted soil will be excavated and disposed of at a licensed disposal facility.
- The excavation will be backfilled and recontoured to match pre-existing conditions. The disturbed pasture will be re-seeded with an approved BLM seed mixture.

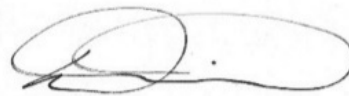
Maverick will complete the excavation activities within 90 days of the date of approval of this RWP by the NMOCD. A report detailing remedial action will be submitted within 30 days of receipt of laboratory analytical results. Maverick believes the scope of work described above will meet requirements set forth in 19.15.29.13 NMAC and be protective of human health, the environment, and groundwater. As such, Maverick respectfully requests approval of this RWP from NMOCD.

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

Sincerely,  
**Ensolum, LLC**



Kalei Jennings  
Senior Scientist



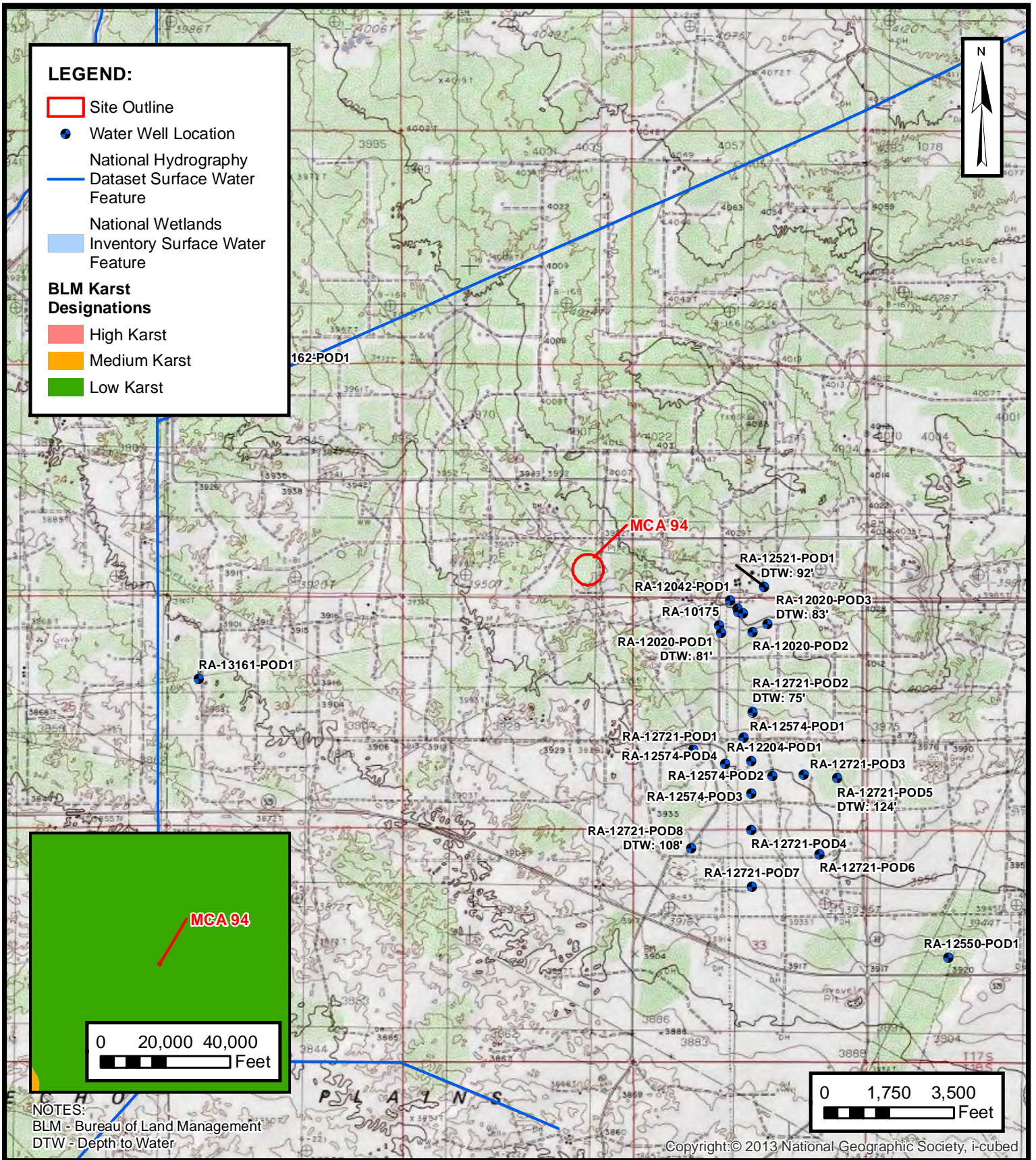
Daniel Moir, PG  
Senior Managing Geologist

cc: Bryce Wagoner, Maverick Natural Resources, LLC  
Bureau of Land Management

Appendices:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic / Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	Final C-141



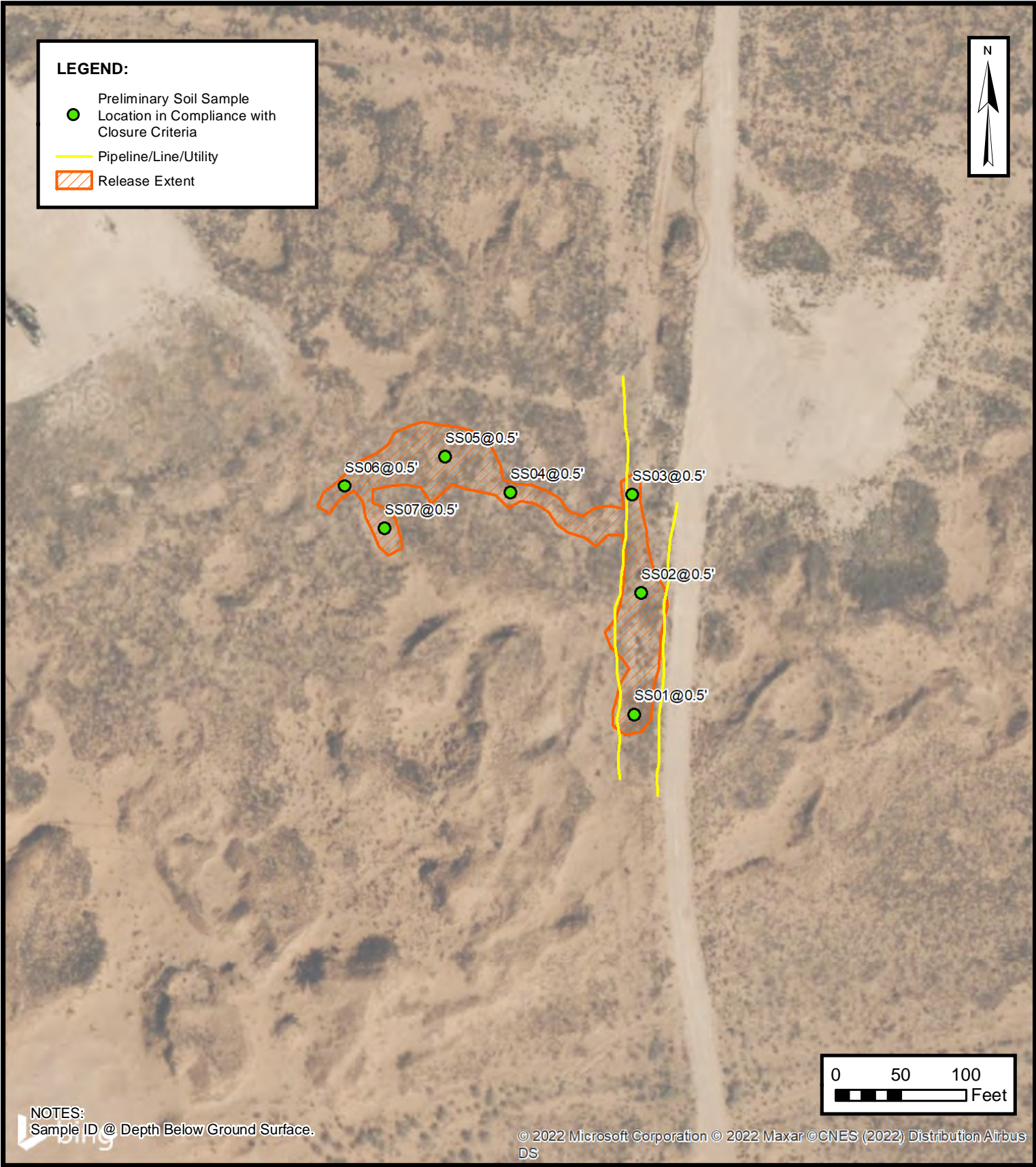


**SITE RECEPTOR MAP**

MAVERICK NATURAL RESOURCES, LLC  
 MCA 94  
 NAPP2212531906  
 Unit P, Sec 20, T17S, R32E  
 Lea County, New Mexico

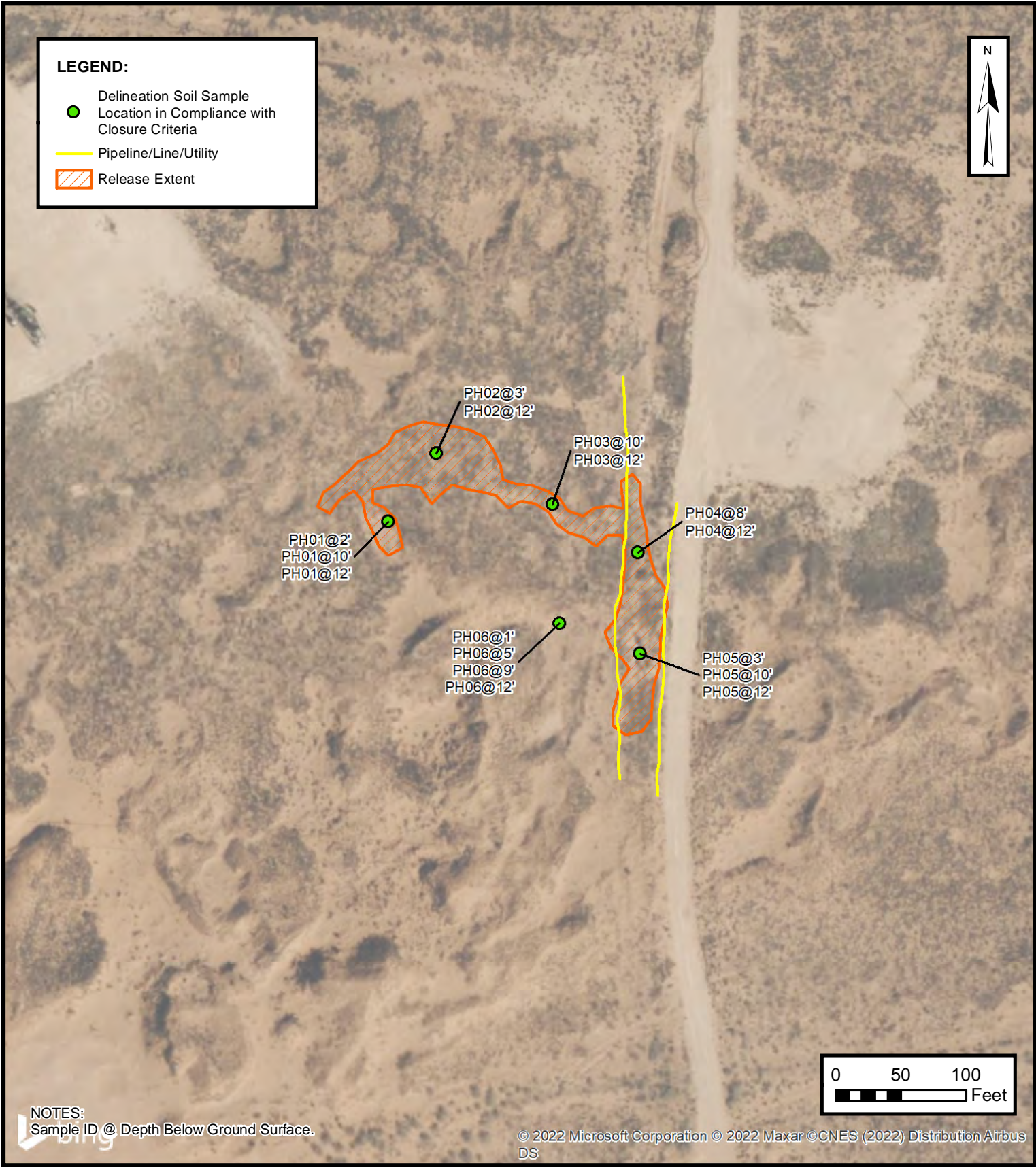
**FIGURE**

**1**



**PRELIMINARY SOIL SAMPLE LOCATIONS**  
 MAVERICK NATURAL RESOURCES, LLC  
 MCA 94  
 NAPP2212531906  
 Unit P, Sec 20, T17S, R32E  
 Lea County, New Mexico

**FIGURE**  
**2**



**DELINEATION SOIL SAMPLE LOCATIONS**

MAVERICK NATURAL RESOURCES, LLC  
 MCA 94  
 NAPP2212531906  
 Unit P, Sec 20, T17S, R32E  
 Lea County, New Mexico

**FIGURE**  
**3**





**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
MCA 94  
Maverick Natural Resources, LLC  
Lea County, New Mexico

Sample Designation	Date	Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCD Table 1 Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>10,000</b>
<b>Preliminary Assessment Soil Samples</b>										
SS01	08/08/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	5,960*
SS02	08/08/2022	0.5	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	545*
SS03	08/08/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	2,520*
SS04	08/08/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	429*
SS05	08/08/2022	0.5	<0.00199	<0.00398	<49.9	55.6	<49.9	55.6	55.6	4,870*
SS06	08/08/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	3,460*
SS07	08/08/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	5.76*
<b>Delineation Soil Samples</b>										
PH01	10/03/2022	2	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	9,380*
PH01	10/03/2022	10	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	1,170
PH01	10/04/2022	12	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	6,400
PH02	10/04/2022	3	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	7,810*
PH02	10/04/2022	12	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	7,510
PH03	10/04/2022	10	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	9,320
PH03	10/04/2022	12	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	8,940
PH04	10/04/2022	8	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	<b>10,300</b>
PH04	10/04/2022	12	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	7,190
PH05	10/04/2022	3	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	164*
PH05	10/06/2022	10	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	6,350
PH05	10/6/2022	12	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	7,310
PH06	10/06/2022	1	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	38.3*
PH06	10/06/2022	5	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	142
PH06	10/06/2022	9	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	50.9
PH06	10/06/2022	12	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	33.2

**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*

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

*Grey text represents samples that have been excavated*

APPENDIX A

Referenced Well Records


---



# New Mexico Office of the State Engineer

## Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest) (NAD83 UTM in meters)

<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
RA	12020 POD1	2	2	1	28	17S	32E	614828	3630954 

---

**Driller License:** 1456      **Driller Company:** WHITE DRILLING COMPANY  
**Driller Name:** WHITE, JOHN (LD)

**Drill Start Date:** 09/24/2013      **Drill Finish Date:** 09/25/2013      **Plug Date:**  
**Log File Date:** 10/07/2013      **PCW Rev Date:**      **Source:** Shallow  
**Pump Type:**      **Pipe Discharge Size:**      **Estimated Yield:**  
**Casing Size:** 2.00      **Depth Well:** 120 feet      **Depth Water:** 81 feet

---

<b>Water Bearing Stratifications:</b>	<b>Top</b>	<b>Bottom</b>	<b>Description</b>
	70	111	Sandstone/Gravel/Conglomerate
	111	120	Shale/Mudstone/Siltstone

---

<b>Casing Perforations:</b>	<b>Top</b>	<b>Bottom</b>
	75	110

---

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

10/24/22 1:27 PM

POINT OF DIVERSION SUMMARY

**IMPORTANT** [Inventory Page](#)

Monitoring location 324600103484601 is associated with a WELL in EDDY COUNTY, NEW MEXICO. Water data back to 1971 are available online.

1 year  10 years  Period of record

Change time span

Retrieve data

### Select data to be downloaded

- Field visits
- About this location

Retrieve

A separate tab will open with the requested data.

All data is in [RDB](#) format.

Data is retrieved from [USGS Water Data Services](#).

If you are an R user, use the [USGS dataRetrieval package](#) to download, analyze and plot your data

## Depth to water level, ft below land surface

454.56 ft - May 27, 1976 12:00:00 AM MDT



drag handles to change timeframe



Field visit:  Approved

Compare to last year

APPENDIX B

Photographic Log

---



Photograph: 1                                      Date: 4/29/2022  
 Description: Soil staining in release footprint  
 View: Northwest



Photograph: 2                                      Date: 4/29/2022  
 Description: Soil staining in release footprint  
 View: Southeast



Photograph: 3                                      Date: 8/8/2022  
 Description: Soil Sampling activities  
 View: West



Photograph: 4                                      Date: 8/8/2022  
 Description: Soil Sampling Activities  
 View: Southwest

## APPENDIX C

### Lithologic Soil Sampling Logs

---





# ENSOLUM

Sample Name: PH01

Date: 10/3/22 &amp; 10/4/22

Site Name: MCA 94

Incident Number: NAPP2212531906

Job Number: 03D2057010

**LITHOLOGIC / SOIL SAMPLING LOG**

Logged By: CW &amp; CS

Method: Backhoe

Coordinates: 32.81441, -103.783172

Hole Diameter:

Total Depth: 12'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Y	10,858	0.0	N		1	1	sp	Sand, VF, Red, w/ Silt
Y	14,935	0.0	N		2	2	sp	Sand, VF, Red, w/ CCHE
N	14,935	0.0	N		3	3	cche	CCHE
N	12,712	0.0	N		4	4	cche	CCHE
N		0.0	N		5	5	cche	CCHE
N	5,756	0.0	N		6	6	cche	CCHE
N		0.0	N		7	7	cche	CCHE
N	1,730	0.0	N		8	8	cche	CCHE
N		0.0	N		9	9	cche	CCHE
Y	8,820	0.0	N		10	10	sp-sm	Stone w/cche Brown/Tan
Y		0.0	N		11	11	sp-sm	Stone w/cche Brown/Tan
N	12,930	0.0	N		12	12	sp-sm	Sand Sandstone w/ cche Brown/Tan



# ENSOLUM

Sample Name: PH02      Date: 10/4/22  
 Site Name: MCA 94  
 Incident Number: NAPP2212531906  
 Job Number: 03D2057010

## LITHOLOGIC / SOIL SAMPLING LOG

Logged By: CS      Method: Backhoe  
 Hole Diameter:      Total Depth: 12'

Coordinates: 32.81441, -103.783172

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	6,988	0.0	N		1	1	sp-sm Sand	Red Brown
N	10,287	0.0	N		2	2	sp-sm Sand	Red Brown
N	11,110	0.0	N		3	3	sp-sm Sand	Red Brown
N	10,287	0.0	N		4	4	sp-sm Sand	Red Brown
N		0.0	N		5	5	sp-sm Sand	Red Brown
N	8,820	0.0	N		6	6	sp-sm Sand	Red Brown
N		0.0	N		7	7	sp-sm Sand	Red Brown
N	11,110	0.0	N		8	8	cche Sand Red Brown w/ Clay & cche	
N		0.0	N		9	9	cche Sand Red Brown w/ Clay & cche	
N	10,287	0.0	N		10	10	cche Sand Tan Brown w/ chhe	
N		0.0	N		11	11	cche Sand Tan Brown w/ chhe	
N	12,006	0.0	N		12	12	cche Sand Tan Brown w/ chhe	



# ENSOLUM

Sample Name: PH03

Date: 10/4/22

Site Name: MCA 94

Incident Number: NAPP2212531906

Job Number: 03D2057010

## LITHOLOGIC / SOIL SAMPLING LOG

Logged By: CS

Method: Backhoe

Coordinates: 32.81441, -103.783172

Hole Diameter:

Total Depth: 12'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	778	0.0	N		1	1	sp-sm	Sand Tan-Brown Med-Fine Grained
N	2,839	0.0	N		2	2	sp-sm	Sand Tan-Brown Med-Fine Grained
N	2,296	0.0	N		3	3	sp-sm	Sand Tan-Brown Med-Fine Grained
N	3,544	0.0	N		4	4	sp-sm	Sand Tan-Brown Med-Fine Grained
N		0.0	N		5	5	sp-sm	Sand Tan-Brown Med-Fine Grained
N	14,067	0.0	N		6	6	sp-sc	Sand Red-Brown w/ Clay
N		0.0	N		7	7	sp-sc	Sand Red-Brown w/ Clay
N	14,067	0.0	N		8	8	sp-sc	Sand Red-Brown w/ Clay
N		0.0	N		9	9	sp-sc	Sand Red-Brown w/ Clay
N	16,592	0.0	N		10	10	sp-sm	Sand Tan-Brown
N		0.0	N		11	11	sp-sm	Sand Tan-Brown
N	14,067	0.0	N		12	12	sp-sm	Sand Tan-Brown



# ENSOLUM

Sample Name: PH04

Date: 10/4/22

Site Name: MCA 94

Incident Number: NAPP2212531906

Job Number: 03D2057010

## LITHOLOGIC / SOIL SAMPLING LOG

Logged By: CS

Method: Backhoe

Coordinates: 32.81441, -103.783172

Hole Diameter:

Total Depth: 12'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	0.0	N		1	1	sp-sm	Sand Brown loose fine grained poorly graded
N	712	0.0	N		2	2	sp-sm	Sand Red Brown compact (wet) fine grained poorly graded
N	2,464	0.0	N		3	3	sp-sm	Sand Red Brown compact (wet) fine grained poorly graded
N	3,544	0.0	N		4	4	sp-sm	Sand Red Brown compact (wet) fine grained poorly graded
N		0.0	N		5	5	sp-sm	Sand Red Brown compact (wet) fine grained poorly graded
N	12,006	0.0	N		6	6	sp-sm	Sand Red Brown compact (wet) fine grained poorly graded
N		0.0	N		7	7	sp-sm	Sand Red Brown compact (wet) fine grained poorly graded
N	14,067	0.0	N		8	8	cche/spsm	Sand Tan Brwon w/ White Clasts?
N		0.0	N		9	9	cche/spsm	Sand Tan Brwon w/ White Clasts?
N	12,006	0.0	N		10	10	spsm/cche	Sand Tan Brwon w/ White Clasts?
N		0.0	N		11	11	spsm/cche	Sand Tan Brwon w/ White Clasts?
N	8,820	0.0	N		12	12	spsm/cche	Sand Tan Brwon w/ White Clasts?



# ENSOLUM

Sample Name: PH05

Date: 10/4/22 & 10/6/22

Site Name: MCA 94

Incident Number: NAPP2212531906

Job Number: 03D2057010

## LITHOLOGIC / SOIL SAMPLING LOG

Logged By: CS

Method: Backhoe

Coordinates: 32.81441, -103.783172

Hole Diameter:

Total Depth: 12'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
N	ND	0.0	N		1	1	sp-sm	Sand Tan/Reddish Brown Fine Grained Poorly Graded
N	ND	0.0	N		2	2	sp-sm	Sand Tan/Reddish Brown Fine Grained Poorly Graded
N	108	0.0	N		3	3	sp-sm	Sand Tan/Reddish Brown Fine Grained Poorly Graded
N	ND	0.0	N		4	4	sp-sm	Sand Tan/Reddish Brown Fine Grained Poorly Graded
N		0.0	N		5	5	sp-sm	Sand Tan/Reddish Brown Fine Grained Poorly Graded
N	3,052	0.0	N		6	6	sp-sm	Sand Red/Brown
N		0.0	N		7	7	sp-sm	Sand Red/Brown
N	2,464	0.0	N		8	8	sp-sm	Sand Red/Brown
N		0.0	N		9	9	sp-sm	Sand Red/Brown
N	15,260	0.0	N		10	10	sp-sm	Sand Tan/Brown w/ White Clasts
N		0.0	N		11	11	sp-sm	Sand Tan/Brown w/ White Clasts
N	15,260	0.0	N		12	12	spsm/cche	Tan Brown w/ White Clasts



# ENSOLUM

Sample Name: PH05

Date: 10/6/22

Site Name: MCA 94

Incident Number: NAPP2212531906

Job Number: 03D2057010

**LITHOLOGIC / SOIL SAMPLING LOG**

Logged By: CS

Method: Backhoe

Coordinates: 32.81441, -103.783172

Hole Diameter:

Total Depth: 12'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
		ND			1	1	sp-sm	Sand Red Brown
		ND			5	5	sp-sm	Sand Red Brown
		ND			9	9	sp-sc	Sand Red/Brown w/ Clay
		ND			12	12	spsm/cche	Sand White Brown w/ Clasts

## APPENDIX D

### Laboratory Analytical Reports & Chain of Custody Documentation

---

## ANALYTICAL REPORT

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

Laboratory Job ID: 890-2733-1  
Laboratory Sample Delivery Group: Lea County NM  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



---

Authorized for release by:  
8/18/2022 9:48:24 AM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.

1

2

3

4

5

6

7

8

9

10

11

12

13

14





# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	11
QC Sample Results . . . . .	12
QC Association Summary . . . . .	18
Lab Chronicle . . . . .	21
Certification Summary . . . . .	24
Method Summary . . . . .	25
Sample Summary . . . . .	26
Chain of Custody . . . . .	27
Receipt Checklists . . . . .	28

# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Job ID: 890-2733-1**

**Laboratory: Eurofins Carlsbad**

## Narrative

### Job Narrative 890-2733-1

#### Receipt

The samples were received on 8/8/2022 3:56 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.2°C

#### GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-18027-A-1-D). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SS06 (890-2733-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: o-Xylene biased high in LCS. Since only an acceptable LCS or LCSD is required per the method, the data has been qualified and reported.(LCS 880-32053/1-A)

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-32053 and analytical batch 880-32046 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample duplicate (LCSD) 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 was outside acceptance limits for the following matrix spike/matrix spike duplicate (MS/MSD) sample: (890-2732-A-1-B MS). The parent sample's surrogate recovery was within limits. The MS/MSD sample has been qualified and reported.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: SS07 (890-2733-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31853 and analytical batch 880-31943 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-31914 and analytical batch 880-31923 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.

Method 300\_ORGFM\_28D: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with preparation batch 880-31914 and analytical batch 880-31923 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Chloride in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

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

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS01**

**Lab Sample ID: 890-2733-1**

Date Collected: 08/08/22 11:00

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 13:59	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 13:59	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 13:59	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/12/22 08:33	08/12/22 13:59	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		08/12/22 08:33	08/12/22 13:59	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/12/22 08:33	08/12/22 13:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	120		70 - 130			08/12/22 08:33	08/12/22 13:59	1
1,4-Difluorobenzene (Surr)	89		70 - 130			08/12/22 08:33	08/12/22 13:59	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/12/22 09:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 13:31	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 13:31	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 13:31	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	102		70 - 130			08/10/22 15:10	08/11/22 13:31	1
o-Terphenyl	112		70 - 130			08/10/22 15:10	08/11/22 13:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5960		50.4	mg/Kg			08/11/22 06:20	10

**Client Sample ID: SS02**

**Lab Sample ID: 890-2733-2**

Date Collected: 08/08/22 11:10

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 14:19	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 14:19	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 14:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/12/22 08:33	08/12/22 14:19	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		08/12/22 08:33	08/12/22 14:19	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/12/22 08:33	08/12/22 14:19	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	119		70 - 130			08/12/22 08:33	08/12/22 14:19	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS02**

**Lab Sample ID: 890-2733-2**

Date Collected: 08/08/22 11:10

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	91		70 - 130	08/12/22 08:33	08/12/22 14:19	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/12/22 09:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 13:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 13:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 13:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130	08/10/22 15:10	08/11/22 13:53	1
o-Terphenyl	97		70 - 130	08/10/22 15:10	08/11/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	545		5.01	mg/Kg			08/11/22 06:48	1

**Client Sample ID: SS03**

**Lab Sample ID: 890-2733-3**

Date Collected: 08/08/22 11:20

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/12/22 08:33	08/12/22 15:42	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/12/22 08:33	08/12/22 15:42	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/12/22 08:33	08/12/22 15:42	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/12/22 08:33	08/12/22 15:42	1
o-Xylene	<0.00199	U*	0.00199	mg/Kg		08/12/22 08:33	08/12/22 15:42	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/12/22 08:33	08/12/22 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	08/12/22 08:33	08/12/22 15:42	1
1,4-Difluorobenzene (Surr)	91		70 - 130	08/12/22 08:33	08/12/22 15:42	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/12/22 09:16	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS03**

**Lab Sample ID: 890-2733-3**

Date Collected: 08/08/22 11:20  
Date Received: 08/08/22 15:56  
Sample Depth: 0.5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 14:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 14:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 14:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			08/10/22 15:10	08/11/22 14:15	1
o-Terphenyl	113		70 - 130			08/10/22 15:10	08/11/22 14:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2520		25.0	mg/Kg			08/11/22 06:57	5

**Client Sample ID: SS04**

**Lab Sample ID: 890-2733-4**

Date Collected: 08/08/22 11:30  
Date Received: 08/08/22 15:56  
Sample Depth: 0.5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 16:03	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 16:03	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 16:03	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/12/22 08:33	08/12/22 16:03	1
o-Xylene	<0.00201	U *	0.00201	mg/Kg		08/12/22 08:33	08/12/22 16:03	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/12/22 08:33	08/12/22 16:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130			08/12/22 08:33	08/12/22 16:03	1
1,4-Difluorobenzene (Surr)	83		70 - 130			08/12/22 08:33	08/12/22 16:03	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			08/12/22 09:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 14:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 14:37	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/10/22 15:10	08/11/22 14:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			08/10/22 15:10	08/11/22 14:37	1
o-Terphenyl	110		70 - 130			08/10/22 15:10	08/11/22 14:37	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS04**

**Lab Sample ID: 890-2733-4**

Date Collected: 08/08/22 11:30  
Date Received: 08/08/22 15:56  
Sample Depth: 0.5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	429		5.00	mg/Kg			08/11/22 07:06	1

**Client Sample ID: SS05**

**Lab Sample ID: 890-2733-5**

Date Collected: 08/08/22 11:40  
Date Received: 08/08/22 15:56  
Sample Depth: 0.5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		08/12/22 08:33	08/12/22 16:23	1
Toluene	<0.00199	U	0.00199	mg/Kg		08/12/22 08:33	08/12/22 16:23	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		08/12/22 08:33	08/12/22 16:23	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		08/12/22 08:33	08/12/22 16:23	1
o-Xylene	<0.00199	U *	0.00199	mg/Kg		08/12/22 08:33	08/12/22 16:23	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		08/12/22 08:33	08/12/22 16:23	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	116		70 - 130			08/12/22 08:33	08/12/22 16:23	1
1,4-Difluorobenzene (Surr)	89		70 - 130			08/12/22 08:33	08/12/22 16:23	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	55.6		49.9	mg/Kg			08/12/22 09:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 14:58	1
<b>Diesel Range Organics (Over C10-C28)</b>	<b>55.6</b>		49.9	mg/Kg		08/10/22 15:10	08/11/22 14:58	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 14:58	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	102		70 - 130			08/10/22 15:10	08/11/22 14:58	1
o-Terphenyl	110		70 - 130			08/10/22 15:10	08/11/22 14:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4870		50.0	mg/Kg			08/11/22 07:15	10

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS06**

**Lab Sample ID: 890-2733-6**

Date Collected: 08/08/22 11:50

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 16:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 16:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 16:44	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		08/12/22 08:33	08/12/22 16:44	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		08/12/22 08:33	08/12/22 16:44	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		08/12/22 08:33	08/12/22 16:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	101		70 - 130			08/12/22 08:33	08/12/22 16:44	1
1,4-Difluorobenzene (Surr)	64	S1-	70 - 130			08/12/22 08:33	08/12/22 16:44	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			08/12/22 09:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 15:20	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 15:20	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 15:20	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	102		70 - 130			08/10/22 15:10	08/11/22 15:20	1
o-Terphenyl	109		70 - 130			08/10/22 15:10	08/11/22 15:20	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3460		50.2	mg/Kg			08/11/22 07:24	10

**Client Sample ID: SS07**

**Lab Sample ID: 890-2733-7**

Date Collected: 08/08/22 12:00

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 17:04	1
Toluene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 17:04	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		08/12/22 08:33	08/12/22 17:04	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		08/12/22 08:33	08/12/22 17:04	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		08/12/22 08:33	08/12/22 17:04	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		08/12/22 08:33	08/12/22 17:04	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	117		70 - 130			08/12/22 08:33	08/12/22 17:04	1

Eurofins Carlsbad



# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS07**

**Lab Sample ID: 890-2733-7**

Date Collected: 08/08/22 12:00

Matrix: Solid

Date Received: 08/08/22 15:56

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	87		70 - 130	08/12/22 08:33	08/12/22 17:04	1

**Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			08/15/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			08/12/22 09:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 16:04	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 16:04	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		08/10/22 15:10	08/11/22 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	122		70 - 130	08/10/22 15:10	08/11/22 16:04	1
o-Terphenyl	141	S1+	70 - 130	08/10/22 15:10	08/11/22 16:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.76		4.99	mg/Kg			08/17/22 18:18	1

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
880-17955-A-8 MS	Matrix Spike	145 S1+	89
880-17955-A-8 MSD	Matrix Spike Duplicate	137 S1+	92
880-18027-A-1-B MS	Matrix Spike	116	98
880-18027-A-1-C MSD	Matrix Spike Duplicate	122	94
890-2733-1	SS01	120	89
890-2733-2	SS02	119	91
890-2733-3	SS03	115	91
890-2733-4	SS04	116	83
890-2733-5	SS05	116	89
890-2733-6	SS06	101	64 S1-
890-2733-7	SS07	117	87
LCS 880-32046/34	Lab Control Sample	118	99
LCS 880-32053/1-A	Lab Control Sample	129	95
LCSD 880-32046/35	Lab Control Sample Dup	116	94
LCSD 880-32053/2-A	Lab Control Sample Dup	108	99
MB 880-32046/39	Method Blank	101	83
MB 880-32053/5-A	Method Blank	99	82

**Surrogate Legend**

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

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
890-2732-A-1-B MS	Matrix Spike	71	67 S1-
890-2732-A-1-C MSD	Matrix Spike Duplicate	73	71
890-2733-1	SS01	102	112
890-2733-2	SS02	91	97
890-2733-3	SS03	100	113
890-2733-4	SS04	102	110
890-2733-5	SS05	102	110
890-2733-6	SS06	102	109
890-2733-7	SS07	122	141 S1+
LCS 880-31853/2-A	Lab Control Sample	103	103
LCSD 880-31853/3-A	Lab Control Sample Dup	119	122
MB 880-31853/1-A	Method Blank	93	112

**Surrogate Legend**

1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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

**Lab Sample ID: MB 880-32046/39**  
**Matrix: Solid**  
**Analysis Batch: 32046**

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg			08/12/22 22:01	1
Toluene	<0.00200	U	0.00200	mg/Kg			08/12/22 22:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			08/12/22 22:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			08/12/22 22:01	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			08/12/22 22:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			08/12/22 22:01	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	101		70 - 130		08/12/22 22:01	1
1,4-Difluorobenzene (Surr)	83		70 - 130		08/12/22 22:01	1

**Lab Sample ID: LCS 880-32046/34**  
**Matrix: Solid**  
**Analysis Batch: 32046**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.09686		mg/Kg		97	70 - 130
Toluene	0.100	0.09575		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.1081		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	0.200	0.2217		mg/Kg		111	70 - 130
o-Xylene	0.100	0.1221		mg/Kg		122	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

**Lab Sample ID: LCSD 880-32046/35**  
**Matrix: Solid**  
**Analysis Batch: 32046**

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

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	0.100	0.09131		mg/Kg		91	70 - 130	6	35
Toluene	0.100	0.09500		mg/Kg		95	70 - 130	1	35
Ethylbenzene	0.100	0.1048		mg/Kg		105	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.2171		mg/Kg		109	70 - 130	2	35
o-Xylene	0.100	0.1198		mg/Kg		120	70 - 130	2	35

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

**Lab Sample ID: 880-17955-A-8 MS**  
**Matrix: Solid**  
**Analysis Batch: 32046**

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00200	U	0.100	0.1003		mg/Kg		100	70 - 130
Toluene	<0.00200	U	0.100	0.1126		mg/Kg		113	70 - 130

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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

**Lab Sample ID: 880-17955-A-8 MS**

**Client Sample ID: Matrix Spike**

**Matrix: Solid**

**Prep Type: Total/NA**

**Analysis Batch: 32046**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00200	U	0.100	0.1293		mg/Kg		129	70 - 130
m-Xylene & p-Xylene	<0.00400	U F1	0.200	0.2794	F1	mg/Kg		140	70 - 130
o-Xylene	<0.00200	U F1	0.100	0.1588	F1	mg/Kg		159	70 - 130
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	145	S1+	70 - 130						
1,4-Difluorobenzene (Surr)	89		70 - 130						

**Lab Sample ID: 880-17955-A-8 MSD**

**Client Sample ID: Matrix Spike Duplicate**

**Matrix: Solid**

**Prep Type: Total/NA**

**Analysis Batch: 32046**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.00200	U	0.100	0.09242		mg/Kg		92	70 - 130	8	35
Toluene	<0.00200	U	0.100	0.1014		mg/Kg		101	70 - 130	10	35
Ethylbenzene	<0.00200	U	0.100	0.1197		mg/Kg		120	70 - 130	8	35
m-Xylene & p-Xylene	<0.00400	U F1	0.200	0.2496		mg/Kg		125	70 - 130	11	35
o-Xylene	<0.00200	U F1	0.100	0.1400	F1	mg/Kg		140	70 - 130	13	35
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
4-Bromofluorobenzene (Surr)	137	S1+	70 - 130								
1,4-Difluorobenzene (Surr)	92		70 - 130								

**Lab Sample ID: MB 880-32053/5-A**

**Client Sample ID: Method Blank**

**Matrix: Solid**

**Prep Type: Total/NA**

**Analysis Batch: 32046**

**Prep Batch: 32053**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 10:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 10:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 10:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		08/12/22 08:33	08/12/22 10:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		08/12/22 08:33	08/12/22 10:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		08/12/22 08:33	08/12/22 10:53	1
<b>MB MB</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>		
4-Bromofluorobenzene (Surr)	99		70 - 130	08/12/22 08:33	08/12/22 10:53	1		
1,4-Difluorobenzene (Surr)	82		70 - 130	08/12/22 08:33	08/12/22 10:53	1		

**Lab Sample ID: LCS 880-32053/1-A**

**Client Sample ID: Lab Control Sample**

**Matrix: Solid**

**Prep Type: Total/NA**

**Analysis Batch: 32046**

**Prep Batch: 32053**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				
Benzene	0.100	0.09482		mg/Kg		95	70 - 130
Toluene	0.100	0.1002		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.1112		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	0.200	0.2383		mg/Kg		119	70 - 130

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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

**Lab Sample ID: LCS 880-32053/1-A**  
**Matrix: Solid**  
**Analysis Batch: 32046**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 32053**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
o-Xylene	0.100	0.1328	*+	mg/Kg		133	70 - 130	
		<b>LCS</b>	<b>LCS</b>					
Surrogate	%Recovery	Qualifier	Limits					
4-Bromofluorobenzene (Surr)	129		70 - 130					
1,4-Difluorobenzene (Surr)	95		70 - 130					

**Lab Sample ID: LCSD 880-32053/2-A**  
**Matrix: Solid**  
**Analysis Batch: 32046**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 32053**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits	RPD	Limit	
Benzene	0.100	0.1031		mg/Kg		103	70 - 130	8	35	
Toluene	0.100	0.09994		mg/Kg		100	70 - 130	0	35	
Ethylbenzene	0.100	0.1057		mg/Kg		106	70 - 130	5	35	
m-Xylene & p-Xylene	0.200	0.2197		mg/Kg		110	70 - 130	8	35	
o-Xylene	0.100	0.1198		mg/Kg		120	70 - 130	10	35	
		<b>LCSD</b>	<b>LCSD</b>							
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	108		70 - 130							
1,4-Difluorobenzene (Surr)	99		70 - 130							

**Lab Sample ID: 880-18027-A-1-B MS**  
**Matrix: Solid**  
**Analysis Batch: 32046**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 32053**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Benzene	<0.00199	U	0.101	0.09679		mg/Kg		95	70 - 130	
Toluene	0.0148		0.101	0.09379		mg/Kg		78	70 - 130	
Ethylbenzene	0.0416	F1	0.101	0.1031	F1	mg/Kg		61	70 - 130	
m-Xylene & p-Xylene	0.117	F1	0.202	0.2156	F1	mg/Kg		49	70 - 130	
o-Xylene	0.0679	*+ F1	0.101	0.1183	F1	mg/Kg		50	70 - 130	
		<b>MS</b>	<b>MS</b>							
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	116		70 - 130							
1,4-Difluorobenzene (Surr)	98		70 - 130							

**Lab Sample ID: 880-18027-A-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 32046**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 32053**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	
									Limits	RPD	Limit	
Benzene	<0.00199	U	0.100	0.1032		mg/Kg		102	70 - 130	6	35	
Toluene	0.0148		0.100	0.1078		mg/Kg		93	70 - 130	14	35	
Ethylbenzene	0.0416	F1	0.100	0.1203		mg/Kg		79	70 - 130	15	35	
m-Xylene & p-Xylene	0.117	F1	0.200	0.2554	F1	mg/Kg		69	70 - 130	17	35	
o-Xylene	0.0679	*+ F1	0.100	0.1419		mg/Kg		74	70 - 130	18	35	

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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

**Lab Sample ID: 880-18027-A-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 32046**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 32053**

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

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

**Lab Sample ID: MB 880-31853/1-A**  
**Matrix: Solid**  
**Analysis Batch: 31943**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 31853**

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		08/09/22 15:10	08/11/22 10:17	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		08/09/22 15:10	08/11/22 10:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		08/09/22 15:10	08/11/22 10:17	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	93		70 - 130	08/09/22 15:10	08/11/22 10:17	1
o-Terphenyl	112		70 - 130	08/09/22 15:10	08/11/22 10:17	1

**Lab Sample ID: LCS 880-31853/2-A**  
**Matrix: Solid**  
**Analysis Batch: 31943**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 31853**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (Over C10-C28)	1000	926.0		mg/Kg		93	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	103		70 - 130
o-Terphenyl	103		70 - 130

**Lab Sample ID: LCSD 880-31853/3-A**  
**Matrix: Solid**  
**Analysis Batch: 31943**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 31853**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1030		mg/Kg		103	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	1000	1070		mg/Kg		107	70 - 130	14	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	119		70 - 130
o-Terphenyl	122		70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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

**Lab Sample ID: 890-2732-A-1-B MS**  
**Matrix: Solid**  
**Analysis Batch: 31943**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 31853**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	974.0		mg/Kg		95	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	623.0	F1	mg/Kg		62	70 - 130
				<b>MS</b>	<b>MS</b>				
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1-Chlorooctane	71		70 - 130						
o-Terphenyl	67	S1-	70 - 130						

**Lab Sample ID: 890-2732-A-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 31943**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 31853**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	929.9		mg/Kg		91	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	668.7	F1	mg/Kg		67	70 - 130	7	20
				<b>MSD</b>	<b>MSD</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1-Chlorooctane	73		70 - 130								
o-Terphenyl	71		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-31914/1-A**  
**Matrix: Solid**  
**Analysis Batch: 31923**

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			08/11/22 03:07	1

**Lab Sample ID: LCS 880-31914/2-A**  
**Matrix: Solid**  
**Analysis Batch: 31923**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	250	243.2		mg/Kg		97	90 - 110

**Lab Sample ID: LCSD 880-31914/3-A**  
**Matrix: Solid**  
**Analysis Batch: 31923**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Chloride	250	253.4		mg/Kg		101	90 - 110	4	20

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 880-17882-A-7-A MSD**  
**Matrix: Solid**  
**Analysis Batch: 31923**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1710	F1	1250	3090	F1	mg/Kg		111	90 - 110	1	20

**Lab Sample ID: 880-17882-A-7-B MS**  
**Matrix: Solid**  
**Analysis Batch: 31923**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1710	F1	1250	3064		mg/Kg		109	90 - 110

**Lab Sample ID: MB 880-31858/1-A**  
**Matrix: Solid**  
**Analysis Batch: 31926**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			08/17/22 14:54	1

**Lab Sample ID: LCS 880-31858/2-A**  
**Matrix: Solid**  
**Analysis Batch: 31926**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

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

**Lab Sample ID: LCSD 880-31858/3-A**  
**Matrix: Solid**  
**Analysis Batch: 31926**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	257.1		mg/Kg		103	90 - 110	0	20

**Lab Sample ID: 890-2732-A-1-F MS**  
**Matrix: Solid**  
**Analysis Batch: 31926**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	7.85		250	276.5		mg/Kg		107	90 - 110

**Lab Sample ID: 890-2732-A-1-F MSD**  
**Matrix: Solid**  
**Analysis Batch: 31926**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	7.85		250	276.4		mg/Kg		107	90 - 110	0	20



# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## GC VOA

### Analysis Batch: 32046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Total/NA	Solid	8021B	32053
890-2733-2	SS02	Total/NA	Solid	8021B	32053
890-2733-3	SS03	Total/NA	Solid	8021B	32053
890-2733-4	SS04	Total/NA	Solid	8021B	32053
890-2733-5	SS05	Total/NA	Solid	8021B	32053
890-2733-6	SS06	Total/NA	Solid	8021B	32053
890-2733-7	SS07	Total/NA	Solid	8021B	32053
MB 880-32046/39	Method Blank	Total/NA	Solid	8021B	
MB 880-32053/5-A	Method Blank	Total/NA	Solid	8021B	32053
LCS 880-32046/34	Lab Control Sample	Total/NA	Solid	8021B	
LCS 880-32053/1-A	Lab Control Sample	Total/NA	Solid	8021B	32053
LCS 880-32046/35	Lab Control Sample Dup	Total/NA	Solid	8021B	
LCS 880-32053/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32053
880-17955-A-8 MS	Matrix Spike	Total/NA	Solid	8021B	
880-17955-A-8 MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	
880-18027-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	32053
880-18027-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32053

### Prep Batch: 32053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Total/NA	Solid	5035	
890-2733-2	SS02	Total/NA	Solid	5035	
890-2733-3	SS03	Total/NA	Solid	5035	
890-2733-4	SS04	Total/NA	Solid	5035	
890-2733-5	SS05	Total/NA	Solid	5035	
890-2733-6	SS06	Total/NA	Solid	5035	
890-2733-7	SS07	Total/NA	Solid	5035	
MB 880-32053/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32053/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 880-32053/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-18027-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-18027-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 32163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Total/NA	Solid	Total BTEX	
890-2733-2	SS02	Total/NA	Solid	Total BTEX	
890-2733-3	SS03	Total/NA	Solid	Total BTEX	
890-2733-4	SS04	Total/NA	Solid	Total BTEX	
890-2733-5	SS05	Total/NA	Solid	Total BTEX	
890-2733-6	SS06	Total/NA	Solid	Total BTEX	
890-2733-7	SS07	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Prep Batch: 31853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Total/NA	Solid	8015NM Prep	
890-2733-2	SS02	Total/NA	Solid	8015NM Prep	
890-2733-3	SS03	Total/NA	Solid	8015NM Prep	
890-2733-4	SS04	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## GC Semi VOA (Continued)

### Prep Batch: 31853 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-5	SS05	Total/NA	Solid	8015NM Prep	
890-2733-6	SS06	Total/NA	Solid	8015NM Prep	
890-2733-7	SS07	Total/NA	Solid	8015NM Prep	
MB 880-31853/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-31853/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-31853/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2732-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2732-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 31943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Total/NA	Solid	8015B NM	31853
890-2733-2	SS02	Total/NA	Solid	8015B NM	31853
890-2733-3	SS03	Total/NA	Solid	8015B NM	31853
890-2733-4	SS04	Total/NA	Solid	8015B NM	31853
890-2733-5	SS05	Total/NA	Solid	8015B NM	31853
890-2733-6	SS06	Total/NA	Solid	8015B NM	31853
890-2733-7	SS07	Total/NA	Solid	8015B NM	31853
MB 880-31853/1-A	Method Blank	Total/NA	Solid	8015B NM	31853
LCS 880-31853/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	31853
LCSD 880-31853/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	31853
890-2732-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	31853
890-2732-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	31853

### Analysis Batch: 32057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Total/NA	Solid	8015 NM	
890-2733-2	SS02	Total/NA	Solid	8015 NM	
890-2733-3	SS03	Total/NA	Solid	8015 NM	
890-2733-4	SS04	Total/NA	Solid	8015 NM	
890-2733-5	SS05	Total/NA	Solid	8015 NM	
890-2733-6	SS06	Total/NA	Solid	8015 NM	
890-2733-7	SS07	Total/NA	Solid	8015 NM	

## HPLC/IC

### Leach Batch: 31858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-7	SS07	Soluble	Solid	DI Leach	
MB 880-31858/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31858/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31858/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2732-A-1-F MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2732-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Leach Batch: 31914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Soluble	Solid	DI Leach	
890-2733-2	SS02	Soluble	Solid	DI Leach	
890-2733-3	SS03	Soluble	Solid	DI Leach	
890-2733-4	SS04	Soluble	Solid	DI Leach	

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## HPLC/IC (Continued)

### Leach Batch: 31914 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-5	SS05	Soluble	Solid	DI Leach	
890-2733-6	SS06	Soluble	Solid	DI Leach	
MB 880-31914/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-31914/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-31914/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17882-A-7-A MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-17882-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	

### Analysis Batch: 31923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-1	SS01	Soluble	Solid	300.0	31914
890-2733-2	SS02	Soluble	Solid	300.0	31914
890-2733-3	SS03	Soluble	Solid	300.0	31914
890-2733-4	SS04	Soluble	Solid	300.0	31914
890-2733-5	SS05	Soluble	Solid	300.0	31914
890-2733-6	SS06	Soluble	Solid	300.0	31914
MB 880-31914/1-A	Method Blank	Soluble	Solid	300.0	31914
LCS 880-31914/2-A	Lab Control Sample	Soluble	Solid	300.0	31914
LCSD 880-31914/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31914
880-17882-A-7-A MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31914
880-17882-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	31914

### Analysis Batch: 31926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2733-7	SS07	Soluble	Solid	300.0	31858
MB 880-31858/1-A	Method Blank	Soluble	Solid	300.0	31858
LCS 880-31858/2-A	Lab Control Sample	Soluble	Solid	300.0	31858
LCSD 880-31858/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	31858
890-2732-A-1-F MS	Matrix Spike	Soluble	Solid	300.0	31858
890-2732-A-1-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	31858

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## Client Sample ID: SS01

## Lab Sample ID: 890-2733-1

Date Collected: 08/08/22 11:00

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 13:59	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 13:31	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	31914	08/10/22 13:18	AJ	EET MID
Soluble	Analysis	300.0		10			31923	08/11/22 06:20	CH	EET MID

## Client Sample ID: SS02

## Lab Sample ID: 890-2733-2

Date Collected: 08/08/22 11:10

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 14:19	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 13:53	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	31914	08/10/22 13:18	AJ	EET MID
Soluble	Analysis	300.0		1			31923	08/11/22 06:48	CH	EET MID

## Client Sample ID: SS03

## Lab Sample ID: 890-2733-3

Date Collected: 08/08/22 11:20

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 15:42	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 14:15	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	31914	08/10/22 13:18	AJ	EET MID
Soluble	Analysis	300.0		5			31923	08/11/22 06:57	CH	EET MID

## Client Sample ID: SS04

## Lab Sample ID: 890-2733-4

Date Collected: 08/08/22 11:30

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 16:03	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## Client Sample ID: SS04

Lab Sample ID: 890-2733-4

Date Collected: 08/08/22 11:30

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 14:37	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	31914	08/10/22 13:18	AJ	EET MID
Soluble	Analysis	300.0		1			31923	08/11/22 07:06	CH	EET MID

## Client Sample ID: SS05

Lab Sample ID: 890-2733-5

Date Collected: 08/08/22 11:40

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 16:23	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 14:58	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	31914	08/10/22 13:18	AJ	EET MID
Soluble	Analysis	300.0		10			31923	08/11/22 07:15	CH	EET MID

## Client Sample ID: SS06

Lab Sample ID: 890-2733-6

Date Collected: 08/08/22 11:50

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 16:44	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 15:20	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	31914	08/10/22 13:18	AJ	EET MID
Soluble	Analysis	300.0		10			31923	08/11/22 07:24	CH	EET MID

## Client Sample ID: SS07

Lab Sample ID: 890-2733-7

Date Collected: 08/08/22 12:00

Matrix: Solid

Date Received: 08/08/22 15:56

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	32053	08/12/22 08:33	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32046	08/12/22 17:04	SM	EET MID
Total/NA	Analysis	Total BTEX		1			32163	08/15/22 11:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			32057	08/12/22 09:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	31853	08/10/22 15:10	DM	EET MID
Total/NA	Analysis	8015B NM		1			31943	08/11/22 16:04	SM	EET MID

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

**Client Sample ID: SS07**

**Lab Sample ID: 890-2733-7**

**Date Collected: 08/08/22 12:00**

**Matrix: Solid**

**Date Received: 08/08/22 15:56**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	31858	08/09/22 15:40	AJ	EET MID
Soluble	Analysis	300.0		1			31926	08/17/22 18:18	CH	EET MID

**Laboratory References:**

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

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

# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

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: MCA 94

Job ID: 890-2733-1  
SDG: Lea County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2733-1	SS01	Solid	08/08/22 11:00	08/08/22 15:56	0.5
890-2733-2	SS02	Solid	08/08/22 11:10	08/08/22 15:56	0.5
890-2733-3	SS03	Solid	08/08/22 11:20	08/08/22 15:56	0.5
890-2733-4	SS04	Solid	08/08/22 11:30	08/08/22 15:56	0.5
890-2733-5	SS05	Solid	08/08/22 11:40	08/08/22 15:56	0.5
890-2733-6	SS06	Solid	08/08/22 11:50	08/08/22 15:56	0.5
890-2733-7	SS07	Solid	08/08/22 12:00	08/08/22 15:56	0.5

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



Environment Testing  
Xenco

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

**Chain of Custody**

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager: Kalei Jennings  
Company Name: Ensolum  
Address: 3122 National Parks HWY  
City, State ZIP: Carlsbad, NM 88220  
Phone: 817-683-2503  
Email: kjennings@ensolum.com

Bill to: (if different)  
Company Name: Ensolum  
Address: 3122 National Parks HWY  
City, State ZIP: Carlsbad, NM 88220

Program:  UST/PST  PRP  Brownfields  RRC  Superfund   
State of Project: \_\_\_\_\_  
Reporting: Level II  Level III  PST/UST  TRRP  Level IV   
Deliverables: EDD  ADAPT  Other: \_\_\_\_\_

Project Name: MCA 94  
Project Number: \_\_\_\_\_  
Project Location: Lea County, NM  
Sampler's Name: Gilbert Moreno  
CC #: \_\_\_\_\_  
Turn Around:  Routine  Rush  
Due Date: 5 Day TAT  
TAT starts the day received by the lab, if received by 4:30pm  
Temp Blank:  Yes  No  
Wet Ice:  Yes  No  
Samples Received Intact:  Yes  No  
Thermometer ID: 177M-007  
Cooler Custody Seals:  Yes  No  
Correction Factor: -0.02  
Sample Custody Seals:  Yes  No  
Temperature Reading: 16.9  
Corrected Temperature: 16.9

Parameters  
CHLORIDES (EPA: 300.0)  
TPH (8015)  
BTEX (8021)

ANALYSIS REQUEST

Preservative Codes  
None: NO  
DI Water: H<sub>2</sub>O  
Cool: Cool  
MeOH: Me  
HCL: HC  
HNO<sub>3</sub>: HN  
H<sub>2</sub>SO<sub>4</sub>: H<sub>2</sub>  
H<sub>3</sub>PO<sub>4</sub>: HP  
NaHSO<sub>4</sub>: NABIS  
Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>: NASO<sub>5</sub>  
Zn Acetate+NaOH: Zn  
NaOH+Ascorbic Acid: SACP



Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Incident Numbers
SS01	S	8.8.22	11:00	0.5'	Grab/	1	X	X	X	
SS02	S	8.8.22	11:10	0.5'	Grab/	1	X	X	X	
SS03	S	8.8.22	11:20	0.5'	Grab/	1	X	X	X	
SS04	S	8.8.22	11:30	0.5'	Grab/	1	X	X	X	NAPP2212531906
SS05	S	8.8.22	11:40	0.5'	Grab/	1	X	X	X	
SS06	S	8.8.22	11:50	0.5'	Grab/	1	X	X	X	
SS07	S	8.8.22	12:00	0.5'	Grab/	1	X	X	X	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Ti Sn U V Zn  
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	8-8-22 15:54			

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2733-1  
SDG Number: Lea County NM

**Login Number: 2733**

**List Number: 1**

**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2733-1  
SDG Number: Lea County NM

**Login Number: 2733**  
**List Number: 2**  
**Creator: Teel, Brianna**

**List Source: Eurofins Midland**  
**List Creation: 08/10/22 10:29 AM**

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



## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3142-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



---

Authorized for release by:  
10/13/2022 3:12:50 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	9
QC Sample Results . . . . .	10
QC Association Summary . . . . .	16
Lab Chronicle . . . . .	19
Certification Summary . . . . .	21
Method Summary . . . . .	22
Sample Summary . . . . .	23
Chain of Custody . . . . .	24
Receipt Checklists . . . . .	25

# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

## Qualifiers

### GC VOA

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

---

**Job ID: 890-3142-1**

---

**Laboratory: Eurofins Carlsbad**

---

**Narrative**

---

**Job Narrative**  
**890-3142-1**

**Receipt**

The samples were received on 10/5/2022 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3142-1), PH01 (890-3142-2), PH01 (890-3142-3) and PH01 (890-3142-4).

**GC VOA**

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

**GC Semi VOA**

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

**HPLC/IC**

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36242 and analytical batch 880-36598 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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





# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-1**

Date Collected: 10/04/22 09:00

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 10'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:48	10/12/22 00:30	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:48	10/12/22 00:30	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:48	10/12/22 00:30	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/10/22 13:48	10/12/22 00:30	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:48	10/12/22 00:30	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/10/22 13:48	10/12/22 00:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	120		70 - 130			10/10/22 13:48	10/12/22 00:30	1
1,4-Difluorobenzene (Surr)	96		70 - 130			10/10/22 13:48	10/12/22 00:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/12/22 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/06/22 08:43	10/06/22 15:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/06/22 08:43	10/06/22 15:32	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/06/22 08:43	10/06/22 15:32	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	88		70 - 130			10/06/22 08:43	10/06/22 15:32	1
o-Terphenyl	95		70 - 130			10/06/22 08:43	10/06/22 15:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5800	F1	49.8	mg/Kg			10/11/22 07:34	10

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-2**

Date Collected: 10/04/22 09:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/10/22 13:48	10/12/22 00:51	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/10/22 13:48	10/12/22 00:51	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/10/22 13:48	10/12/22 00:51	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/10/22 13:48	10/12/22 00:51	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/10/22 13:48	10/12/22 00:51	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/10/22 13:48	10/12/22 00:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	115		70 - 130			10/10/22 13:48	10/12/22 00:51	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-2**

Date Collected: 10/04/22 09:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	99		70 - 130	10/10/22 13:48	10/12/22 00:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/12/22 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 15:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 15:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 15:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130	10/06/22 08:43	10/06/22 15:53	1
o-Terphenyl	91		70 - 130	10/06/22 08:43	10/06/22 15:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6400		49.5	mg/Kg			10/11/22 07:57	10

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-3**

Date Collected: 10/03/22 15:35

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/12/22 10:00	10/13/22 11:50	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/12/22 10:00	10/13/22 11:50	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/12/22 10:00	10/13/22 11:50	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/12/22 10:00	10/13/22 11:50	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/12/22 10:00	10/13/22 11:50	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/12/22 10:00	10/13/22 11:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130	10/12/22 10:00	10/13/22 11:50	1
1,4-Difluorobenzene (Surr)	97		70 - 130	10/12/22 10:00	10/13/22 11:50	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/12/22 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/07/22 09:47	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-3**

Date Collected: 10/03/22 15:35

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 16:14	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 16:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 16:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130			10/06/22 08:43	10/06/22 16:14	1
o-Terphenyl	104		70 - 130			10/06/22 08:43	10/06/22 16:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9380		99.8	mg/Kg			10/11/22 08:05	20

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-4**

Date Collected: 10/03/22 16:00

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 10'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		10/12/22 10:00	10/13/22 12:10	1
Toluene	<0.00198	U	0.00198	mg/Kg		10/12/22 10:00	10/13/22 12:10	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		10/12/22 10:00	10/13/22 12:10	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		10/12/22 10:00	10/13/22 12:10	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		10/12/22 10:00	10/13/22 12:10	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		10/12/22 10:00	10/13/22 12:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130			10/12/22 10:00	10/13/22 12:10	1
1,4-Difluorobenzene (Surr)	103		70 - 130			10/12/22 10:00	10/13/22 12:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			10/12/22 11:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 16:34	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 16:34	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 16:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130			10/06/22 08:43	10/06/22 16:34	1
o-Terphenyl	95		70 - 130			10/06/22 08:43	10/06/22 16:34	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-4**

Date Collected: 10/03/22 16:00

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 10'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1170		5.03	mg/Kg			10/11/22 08:12	1

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

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
890-3142-1	PH01	120	96
890-3142-2	PH01	115	99
890-3142-3	PH01	110	97
890-3142-3 MS	PH01	95	102
890-3142-3 MSD	PH01	99	104
890-3142-4	PH01	92	103
890-3147-A-1-C MS	Matrix Spike	94	97
890-3147-A-1-D MSD	Matrix Spike Duplicate	94	93
LCS 880-36590/1-A	Lab Control Sample	89	92
LCS 880-36731/1-A	Lab Control Sample	94	106
LCSD 880-36590/2-A	Lab Control Sample Dup	89	92
LCSD 880-36731/2-A	Lab Control Sample Dup	95	104
MB 880-36590/5-A	Method Blank	98	82
MB 880-36628/5-A	Method Blank	106	84
MB 880-36731/5-A	Method Blank	88	108

**Surrogate Legend**

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

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
880-19921-A-8-B MS	Matrix Spike	84	80
880-19921-A-8-C MSD	Matrix Spike Duplicate	86	82
890-3142-1	PH01	88	95
890-3142-2	PH01	88	91
890-3142-3	PH01	95	104
890-3142-4	PH01	88	95
LCS 880-36227/2-A	Lab Control Sample	85	90
LCSD 880-36227/3-A	Lab Control Sample Dup	99	106
MB 880-36227/1-A	Method Blank	105	114

**Surrogate Legend**

1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36590/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36625**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36590**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:48	10/11/22 21:22	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:48	10/11/22 21:22	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:48	10/11/22 21:22	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 13:48	10/11/22 21:22	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:48	10/11/22 21:22	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 13:48	10/11/22 21:22	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	98		70 - 130	10/10/22 13:48	10/11/22 21:22	1
1,4-Difluorobenzene (Surr)	82		70 - 130	10/10/22 13:48	10/11/22 21:22	1

**Lab Sample ID: LCS 880-36590/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36625**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36590**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.09596		mg/Kg		96	70 - 130
Toluene	0.100	0.09632		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.08819		mg/Kg		88	70 - 130
m-Xylene & p-Xylene	0.200	0.1845		mg/Kg		92	70 - 130
o-Xylene	0.100	0.09352		mg/Kg		94	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

**Lab Sample ID: LCSD 880-36590/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36625**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36590**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	0.100	0.1054		mg/Kg		105	70 - 130	9	35
Toluene	0.100	0.1064		mg/Kg		106	70 - 130	10	35
Ethylbenzene	0.100	0.09629		mg/Kg		96	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1995		mg/Kg		100	70 - 130	8	35
o-Xylene	0.100	0.09993		mg/Kg		100	70 - 130	7	35

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

**Lab Sample ID: 890-3147-A-1-C MS**  
**Matrix: Solid**  
**Analysis Batch: 36625**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36590**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00200	U	0.0998	0.1006		mg/Kg		101	70 - 130
Toluene	<0.00200	U	0.0998	0.09590		mg/Kg		95	70 - 130

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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

Lab Sample ID: 890-3147-A-1-C MS

Client Sample ID: Matrix Spike

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36625

Prep Batch: 36590

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier	Added	Result	Qualifier				
Ethylbenzene	<0.00200	U	0.0998	0.08125		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1643		mg/Kg		82	70 - 130
o-Xylene	<0.00200	U	0.0998	0.08297		mg/Kg		83	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 890-3147-A-1-D MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36625

Prep Batch: 36590

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier					
Benzene	<0.00200	U	0.0996	0.1022		mg/Kg		103	70 - 130	2 35
Toluene	<0.00200	U	0.0996	0.1003		mg/Kg		99	70 - 130	5 35
Ethylbenzene	<0.00200	U	0.0996	0.08603		mg/Kg		86	70 - 130	6 35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1774		mg/Kg		89	70 - 130	8 35
o-Xylene	<0.00200	U	0.0996	0.08805		mg/Kg		88	70 - 130	6 35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: MB 880-36628/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36625

Prep Batch: 36628

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 08:09	10/11/22 10:38	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/11/22 08:09	10/11/22 10:38	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	106		70 - 130	10/11/22 08:09	10/11/22 10:38	1
1,4-Difluorobenzene (Surr)	84		70 - 130	10/11/22 08:09	10/11/22 10:38	1

Lab Sample ID: MB 880-36731/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36813

Prep Batch: 36731

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/12/22 10:00	10/13/22 11:21	1

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36731/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/12/22 10:00	10/13/22 11:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	88		70 - 130	10/12/22 10:00	10/13/22 11:21	1
1,4-Difluorobenzene (Surr)	108		70 - 130	10/12/22 10:00	10/13/22 11:21	1

**Lab Sample ID: LCS 880-36731/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.07510		mg/Kg		75	70 - 130
Toluene	0.100	0.08909		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.07922		mg/Kg		79	70 - 130
m-Xylene & p-Xylene	0.200	0.1568		mg/Kg		78	70 - 130
o-Xylene	0.100	0.07872		mg/Kg		79	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

**Lab Sample ID: LCSD 880-36731/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	0.100	0.09069		mg/Kg		91	70 - 130	19	35
Toluene	0.100	0.09188		mg/Kg		92	70 - 130	3	35
Ethylbenzene	0.100	0.08146		mg/Kg		81	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1640		mg/Kg		82	70 - 130	4	35
o-Xylene	0.100	0.08158		mg/Kg		82	70 - 130	4	35

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

**Lab Sample ID: 890-3142-3 MS**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: PH01**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00201	U	0.0998	0.09148		mg/Kg		92	70 - 130
Toluene	<0.00201	U	0.0998	0.09208		mg/Kg		92	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.08246		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1662		mg/Kg		83	70 - 130
o-Xylene	<0.00201	U	0.0998	0.08307		mg/Kg		83	70 - 130



# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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

**Lab Sample ID: 890-3142-3 MS**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: PH01**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

**Lab Sample ID: 890-3142-3 MSD**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: PH01**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec		RPD	
				Result	Qualifier				Limits	RPD	Limit	
Benzene	<0.00201	U	0.0990	0.08863		mg/Kg		90	70 - 130	3	35	
Toluene	<0.00201	U	0.0990	0.09418		mg/Kg		95	70 - 130	2	35	
Ethylbenzene	<0.00201	U	0.0990	0.08216		mg/Kg		83	70 - 130	0	35	
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1661		mg/Kg		84	70 - 130	0	35	
o-Xylene	<0.00201	U	0.0990	0.08369		mg/Kg		84	70 - 130	1	35	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

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

**Lab Sample ID: MB 880-36227/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	105		70 - 130	10/06/22 08:43	10/06/22 09:43	1
o-Terphenyl	114		70 - 130	10/06/22 08:43	10/06/22 09:43	1

**Lab Sample ID: LCS 880-36227/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	RPD
Gasoline Range Organics (GRO)-C6-C10	1000	823.7		mg/Kg		82	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	835.9		mg/Kg		84	70 - 130	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	85		70 - 130
o-Terphenyl	90		70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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

**Lab Sample ID: LCSD 880-36227/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	1000	893.3		mg/Kg		89	70 - 130	8	20	
Diesel Range Organics (Over C10-C28)	1000	915.3		mg/Kg		92	70 - 130	9	20	
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1-Chlorooctane	99		70 - 130							
o-Terphenyl	106		70 - 130							

**Lab Sample ID: 880-19921-A-8-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1025		mg/Kg		100	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	998	838.6		mg/Kg		81	70 - 130		
		<b>MS</b>	<b>MS</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1-Chlorooctane	84		70 - 130								
o-Terphenyl	80		70 - 130								

**Lab Sample ID: 880-19921-A-8-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1051		mg/Kg		103	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	868.5		mg/Kg		84	70 - 130	4	20
		<b>MSD</b>	<b>MSD</b>								
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1-Chlorooctane	86		70 - 130								
o-Terphenyl	82		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-36242/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/11/22 07:11	1

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 880-36242/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	260.6		mg/Kg		104	90 - 110

**Lab Sample ID: LCSD 880-36242/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	260.8		mg/Kg		104	90 - 110	0	20

**Lab Sample ID: 890-3142-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: PH01**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5800	F1	2490	9310	F1	mg/Kg		141	90 - 110

**Lab Sample ID: 890-3142-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: PH01**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5800	F1	2490	9291	F1	mg/Kg		140	90 - 110	0	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Total/NA	Solid	5035	
890-3142-2	PH01	Total/NA	Solid	5035	
MB 880-36590/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36590/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36590/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3147-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3147-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 36625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Total/NA	Solid	8021B	36590
890-3142-2	PH01	Total/NA	Solid	8021B	36590
MB 880-36590/5-A	Method Blank	Total/NA	Solid	8021B	36590
MB 880-36628/5-A	Method Blank	Total/NA	Solid	8021B	36628
LCS 880-36590/1-A	Lab Control Sample	Total/NA	Solid	8021B	36590
LCSD 880-36590/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36590
890-3147-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	36590
890-3147-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36590

### Prep Batch: 36628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36628/5-A	Method Blank	Total/NA	Solid	5035	

### Prep Batch: 36731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-3	PH01	Total/NA	Solid	5035	
890-3142-4	PH01	Total/NA	Solid	5035	
MB 880-36731/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36731/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36731/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3142-3 MS	PH01	Total/NA	Solid	5035	
890-3142-3 MSD	PH01	Total/NA	Solid	5035	

### Analysis Batch: 36758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Total/NA	Solid	Total BTEX	
890-3142-2	PH01	Total/NA	Solid	Total BTEX	
890-3142-3	PH01	Total/NA	Solid	Total BTEX	
890-3142-4	PH01	Total/NA	Solid	Total BTEX	

### Analysis Batch: 36813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-3	PH01	Total/NA	Solid	8021B	36731
890-3142-4	PH01	Total/NA	Solid	8021B	36731
MB 880-36731/5-A	Method Blank	Total/NA	Solid	8021B	36731
LCS 880-36731/1-A	Lab Control Sample	Total/NA	Solid	8021B	36731
LCSD 880-36731/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36731
890-3142-3 MS	PH01	Total/NA	Solid	8021B	36731
890-3142-3 MSD	PH01	Total/NA	Solid	8021B	36731

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

## GC Semi VOA

### Analysis Batch: 36218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Total/NA	Solid	8015B NM	36227
890-3142-2	PH01	Total/NA	Solid	8015B NM	36227
890-3142-3	PH01	Total/NA	Solid	8015B NM	36227
890-3142-4	PH01	Total/NA	Solid	8015B NM	36227
MB 880-36227/1-A	Method Blank	Total/NA	Solid	8015B NM	36227
LCS 880-36227/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36227
LCSD 880-36227/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36227
880-19921-A-8-B MS	Matrix Spike	Total/NA	Solid	8015B NM	36227
880-19921-A-8-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36227

### Prep Batch: 36227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Total/NA	Solid	8015NM Prep	
890-3142-2	PH01	Total/NA	Solid	8015NM Prep	
890-3142-3	PH01	Total/NA	Solid	8015NM Prep	
890-3142-4	PH01	Total/NA	Solid	8015NM Prep	
MB 880-36227/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36227/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36227/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19921-A-8-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19921-A-8-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 36342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Total/NA	Solid	8015 NM	
890-3142-2	PH01	Total/NA	Solid	8015 NM	
890-3142-3	PH01	Total/NA	Solid	8015 NM	
890-3142-4	PH01	Total/NA	Solid	8015 NM	

## HPLC/IC

### Leach Batch: 36242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Soluble	Solid	DI Leach	
890-3142-2	PH01	Soluble	Solid	DI Leach	
890-3142-3	PH01	Soluble	Solid	DI Leach	
890-3142-4	PH01	Soluble	Solid	DI Leach	
MB 880-36242/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36242/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36242/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3142-1 MS	PH01	Soluble	Solid	DI Leach	
890-3142-1 MSD	PH01	Soluble	Solid	DI Leach	

### Analysis Batch: 36598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-1	PH01	Soluble	Solid	300.0	36242
890-3142-2	PH01	Soluble	Solid	300.0	36242
890-3142-3	PH01	Soluble	Solid	300.0	36242
890-3142-4	PH01	Soluble	Solid	300.0	36242
MB 880-36242/1-A	Method Blank	Soluble	Solid	300.0	36242
LCS 880-36242/2-A	Lab Control Sample	Soluble	Solid	300.0	36242

Eurofins Carlsbad

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

## HPLC/IC (Continued)

### Analysis Batch: 36598 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-36242/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36242
890-3142-1 MS	PH01	Soluble	Solid	300.0	36242
890-3142-1 MSD	PH01	Soluble	Solid	300.0	36242

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

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-1**

Date Collected: 10/04/22 09:00

Matrix: Solid

Date Received: 10/05/22 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	36590	10/10/22 13:48	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/12/22 00:30	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36758	10/12/22 11:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			36342	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 15:32	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		10			36598	10/11/22 07:34	CH	EET MID

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-2**

Date Collected: 10/04/22 09:30

Matrix: Solid

Date Received: 10/05/22 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	36590	10/10/22 13:48	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36625	10/12/22 00:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36758	10/12/22 11:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			36342	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 15:53	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		10			36598	10/11/22 07:57	CH	EET MID

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-3**

Date Collected: 10/03/22 15:35

Matrix: Solid

Date Received: 10/05/22 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	36731	10/12/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36813	10/13/22 11:50	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36758	10/12/22 11:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			36342	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 16:14	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		20			36598	10/11/22 08:05	CH	EET MID

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-4**

Date Collected: 10/03/22 16:00

Matrix: Solid

Date Received: 10/05/22 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	36731	10/12/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36813	10/13/22 12:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36758	10/12/22 11:46	SM	EET MID

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

**Client Sample ID: PH01**

**Lab Sample ID: 890-3142-4**

**Date Collected: 10/03/22 16:00**

**Matrix: Solid**

**Date Received: 10/05/22 09:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			36342	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 16:34	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		1			36598	10/11/22 08:12	CH	EET MID

**Laboratory References:**

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





# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3142-1  
SDG: 03D2057010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3142-1	PH01	Solid	10/04/22 09:00	10/05/22 09:10	10'
890-3142-2	PH01	Solid	10/04/22 09:30	10/05/22 09:10	12'
890-3142-3	PH01	Solid	10/03/22 15:35	10/05/22 09:10	2'
890-3142-4	PH01	Solid	10/03/22 16:00	10/05/22 09:10	10'

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



Environment Testing  
Xenco

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

### Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Kaler Jennings	Bill to: (if different)	Kaler Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marientfield St Suite 400	Address:	601 N Marientfield St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:		Email:	kjennings@ensolum.com

Program: <input type="checkbox"/> UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project:	
Reporting: Level II	<input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables: EDD	<input type="checkbox"/> ADAPT <input type="checkbox"/> Other:

Project Name:	MCA 94	Turn Around	Pres. Code
Project Number:	03D2057010	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:	Conner Shore	Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:			
<b>SAMPLE RECEIPT</b>	Temp Blank: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wet Ice: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Samples Received Inact:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Thermometer ID:	1111-007
Cooler Custody Seals:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Correction Factor:	-0.2
Sample Custody Seals:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Temperature Reading:	1.8
Total Containers:		Corrected Temperature:	1.6



890-3142 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	ANALYSIS REQUEST		Preservative Codes
							CHLORIDES (EPA: 300.0)	TPH (8015)	
PH01	S	10.04.22	900	10'	G	2	X	X	
PH01	S	10.04.22	930	12'	G	2	X	X	
PH01	S	10.03.22	1535	2'	G	1	X	X	
PH01	S	10.03.22	1600	10'	G	1	X	X	

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$65.00 will be applied to each project and a charge of \$6 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3142-1

SDG Number: 03D2057010

**Login Number: 3142**

**List Number: 1**

**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3142-1

SDG Number: 03D2057010

**Login Number: 3142**

**List Number: 2**

**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

**List Creation: 10/06/22 10:20 AM**

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



## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3143-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



---

Authorized for release by:  
10/13/2022 3:12:49 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	7
QC Sample Results . . . . .	8
QC Association Summary . . . . .	12
Lab Chronicle . . . . .	14
Certification Summary . . . . .	15
Method Summary . . . . .	16
Sample Summary . . . . .	17
Chain of Custody . . . . .	18
Receipt Checklists . . . . .	19



# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

---

**Job ID: 890-3143-1**

---

**Laboratory: Eurofins Carlsbad**

---

**Narrative**

---

**Job Narrative  
890-3143-1**

**Receipt**

The samples were received on 10/5/2022 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: PH02 (890-3143-1) and PH02 (890-3143-2).

**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 surrogate recovery for the blank associated with preparation batch 880-36292 and analytical batch 880-36222 was outside the upper control limits.

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

**HPLC/IC**

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36241 and analytical batch 880-36597 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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



# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

**Client Sample ID: PH02**

**Lab Sample ID: 890-3143-1**

Date Collected: 10/04/22 10:05

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 3'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 12:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 12:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 12:31	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/12/22 10:00	10/13/22 12:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 12:31	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/12/22 10:00	10/13/22 12:31	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	95		70 - 130			10/12/22 10:00	10/13/22 12:31	1
1,4-Difluorobenzene (Surr)	101		70 - 130			10/12/22 10:00	10/13/22 12:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/13/22 15:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/07/22 10:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 21:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 21:19	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 21:19	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	83		70 - 130			10/06/22 15:51	10/06/22 21:19	1
o-Terphenyl	76		70 - 130			10/06/22 15:51	10/06/22 21:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7810		50.5	mg/Kg			10/11/22 02:10	10

**Client Sample ID: PH02**

**Lab Sample ID: 890-3143-2**

Date Collected: 10/04/22 10:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/12/22 10:00	10/13/22 12:51	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/12/22 10:00	10/13/22 12:51	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/12/22 10:00	10/13/22 12:51	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/12/22 10:00	10/13/22 12:51	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/12/22 10:00	10/13/22 12:51	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/12/22 10:00	10/13/22 12:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	92		70 - 130			10/12/22 10:00	10/13/22 12:51	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

**Client Sample ID: PH02**

**Lab Sample ID: 890-3143-2**

Date Collected: 10/04/22 10:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102		70 - 130	10/12/22 10:00	10/13/22 12:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/13/22 15:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/07/22 10:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 22:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 22:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 22:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130	10/06/22 15:51	10/06/22 22:24	1
o-Terphenyl	78		70 - 130	10/06/22 15:51	10/06/22 22:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7510		50.0	mg/Kg			10/11/22 02:17	10

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3142-A-3-D MS	Matrix Spike	95	102
890-3142-A-3-E MSD	Matrix Spike Duplicate	99	104
890-3143-1	PH02	95	101
890-3143-2	PH02	92	102
LCS 880-36731/1-A	Lab Control Sample	94	106
LCSD 880-36731/2-A	Lab Control Sample Dup	95	104
MB 880-36731/5-A	Method Blank	88	108

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3143-1	PH02	83	76
890-3143-1 MS	PH02	84	70
890-3143-1 MSD	PH02	87	72
890-3143-2	PH02	82	78
LCS 880-36292/2-A	Lab Control Sample	95	92
LCSD 880-36292/3-A	Lab Control Sample Dup	94	90
MB 880-36292/1-A	Method Blank	11 S1-	13 S1-

#### Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36731/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/12/22 10:00	10/13/22 11:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	10/12/22 10:00	10/13/22 11:21	1
1,4-Difluorobenzene (Surr)	108		70 - 130	10/12/22 10:00	10/13/22 11:21	1

**Lab Sample ID: LCS 880-36731/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07510		mg/Kg		75	70 - 130
Toluene	0.100	0.08909		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.07922		mg/Kg		79	70 - 130
m-Xylene & p-Xylene	0.200	0.1568		mg/Kg		78	70 - 130
o-Xylene	0.100	0.07872		mg/Kg		79	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

**Lab Sample ID: LCSD 880-36731/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.09069		mg/Kg		91	70 - 130	19	35
Toluene	0.100	0.09188		mg/Kg		92	70 - 130	3	35
Ethylbenzene	0.100	0.08146		mg/Kg		81	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1640		mg/Kg		82	70 - 130	4	35
o-Xylene	0.100	0.08158		mg/Kg		82	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

**Lab Sample ID: 890-3142-A-3-D MS**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.09148		mg/Kg		92	70 - 130
Toluene	<0.00201	U	0.0998	0.09208		mg/Kg		92	70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

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

**Lab Sample ID: 890-3142-A-3-D MS**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00201	U	0.0998	0.08246		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1662		mg/Kg		83	70 - 130
o-Xylene	<0.00201	U	0.0998	0.08307		mg/Kg		83	70 - 130
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	95		70 - 130						
1,4-Difluorobenzene (Surr)	102		70 - 130						

**Lab Sample ID: 890-3142-A-3-E MSD**  
**Matrix: Solid**  
**Analysis Batch: 36813**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 36731**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.00201	U	0.0990	0.08863		mg/Kg		90	70 - 130	3	35
Toluene	<0.00201	U	0.0990	0.09418		mg/Kg		95	70 - 130	2	35
Ethylbenzene	<0.00201	U	0.0990	0.08216		mg/Kg		83	70 - 130	0	35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1661		mg/Kg		84	70 - 130	0	35
o-Xylene	<0.00201	U	0.0990	0.08369		mg/Kg		84	70 - 130	1	35
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	99		70 - 130								
1,4-Difluorobenzene (Surr)	104		70 - 130								

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

**Lab Sample ID: MB 880-36292/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36222**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36292**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 19:28	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 19:28	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 15:51	10/06/22 19:28	1
<b>MB MB</b>								
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	11	S1-	70 - 130	10/06/22 15:51	10/06/22 19:28	1		
o-Terphenyl	13	S1-	70 - 130	10/06/22 15:51	10/06/22 19:28	1		

**Lab Sample ID: LCS 880-36292/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36222**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36292**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
Gasoline Range Organics (GRO)-C6-C10	1000	954.5		mg/Kg		95	70 - 130
Diesel Range Organics (Over C10-C28)	1000	872.9		mg/Kg		87	70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

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

**Lab Sample ID: LCS 880-36292/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36222**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36292**

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	95		70 - 130
o-Terphenyl	92		70 - 130

**Lab Sample ID: LCSD 880-36292/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36222**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36292**

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec		RPD	Limit
		Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	1000	937.8		mg/Kg		94	70 - 130	2	20	
Diesel Range Organics (Over C10-C28)	1000	848.7		mg/Kg		85	70 - 130	3	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	94		70 - 130
o-Terphenyl	90		70 - 130

**Lab Sample ID: 890-3143-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 36222**

**Client Sample ID: PH02**  
**Prep Type: Total/NA**  
**Prep Batch: 36292**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	RPD
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1052		mg/Kg		103	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	998	799.9		mg/Kg		80	70 - 130	

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

**Lab Sample ID: 890-3143-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 36222**

**Client Sample ID: PH02**  
**Prep Type: Total/NA**  
**Prep Batch: 36292**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1090		mg/Kg		107	70 - 130	4	20	
Diesel Range Organics (Over C10-C28)	<50.0	U	999	830.8		mg/Kg		83	70 - 130	4	20	

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	87		70 - 130
o-Terphenyl	72		70 - 130



# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-36241/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36597**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/10/22 22:26	1

**Lab Sample ID: LCS 880-36241/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36597**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	257.6		mg/Kg		103	90 - 110

**Lab Sample ID: LCSD 880-36241/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36597**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	256.4		mg/Kg		103	90 - 110	0	20

**Lab Sample ID: 890-3141-A-11-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36597**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3180	F1	1250	4582	F1	mg/Kg		112	90 - 110

**Lab Sample ID: 890-3141-A-11-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36597**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3180	F1	1250	4577	F1	mg/Kg		112	90 - 110	0	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Total/NA	Solid	5035	
890-3143-2	PH02	Total/NA	Solid	5035	
MB 880-36731/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36731/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36731/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3142-A-3-D MS	Matrix Spike	Total/NA	Solid	5035	
890-3142-A-3-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 36813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Total/NA	Solid	8021B	36731
890-3143-2	PH02	Total/NA	Solid	8021B	36731
MB 880-36731/5-A	Method Blank	Total/NA	Solid	8021B	36731
LCS 880-36731/1-A	Lab Control Sample	Total/NA	Solid	8021B	36731
LCSD 880-36731/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36731
890-3142-A-3-D MS	Matrix Spike	Total/NA	Solid	8021B	36731
890-3142-A-3-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36731

### Analysis Batch: 36894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Total/NA	Solid	Total BTEX	
890-3143-2	PH02	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Analysis Batch: 36222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Total/NA	Solid	8015B NM	36292
890-3143-2	PH02	Total/NA	Solid	8015B NM	36292
MB 880-36292/1-A	Method Blank	Total/NA	Solid	8015B NM	36292
LCS 880-36292/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36292
LCSD 880-36292/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36292
890-3143-1 MS	PH02	Total/NA	Solid	8015B NM	36292
890-3143-1 MSD	PH02	Total/NA	Solid	8015B NM	36292

### Prep Batch: 36292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Total/NA	Solid	8015NM Prep	
890-3143-2	PH02	Total/NA	Solid	8015NM Prep	
MB 880-36292/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36292/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36292/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3143-1 MS	PH02	Total/NA	Solid	8015NM Prep	
890-3143-1 MSD	PH02	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 36363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Total/NA	Solid	8015 NM	
890-3143-2	PH02	Total/NA	Solid	8015 NM	

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

## HPLC/IC

### Leach Batch: 36241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Soluble	Solid	DI Leach	
890-3143-2	PH02	Soluble	Solid	DI Leach	
MB 880-36241/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36241/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36241/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3141-A-11-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3141-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 36597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3143-1	PH02	Soluble	Solid	300.0	36241
890-3143-2	PH02	Soluble	Solid	300.0	36241
MB 880-36241/1-A	Method Blank	Soluble	Solid	300.0	36241
LCS 880-36241/2-A	Lab Control Sample	Soluble	Solid	300.0	36241
LCSD 880-36241/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36241
890-3141-A-11-B MS	Matrix Spike	Soluble	Solid	300.0	36241
890-3141-A-11-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36241

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

**Client Sample ID: PH02**

**Lab Sample ID: 890-3143-1**

**Date Collected: 10/04/22 10:05**

**Matrix: Solid**

**Date Received: 10/05/22 09:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	36731	10/12/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36813	10/13/22 12:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36894	10/13/22 15:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			36363	10/07/22 10:14	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	36292	10/06/22 15:51	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36222	10/06/22 21:19	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	36241	10/06/22 09:50	CH	EET MID
Soluble	Analysis	300.0		10			36597	10/11/22 02:10	CH	EET MID

**Client Sample ID: PH02**

**Lab Sample ID: 890-3143-2**

**Date Collected: 10/04/22 10:30**

**Matrix: Solid**

**Date Received: 10/05/22 09:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	36731	10/12/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36813	10/13/22 12:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36894	10/13/22 15:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			36363	10/07/22 10:14	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	36292	10/06/22 15:51	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36222	10/06/22 22:24	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	36241	10/06/22 09:50	CH	EET MID
Soluble	Analysis	300.0		10			36597	10/11/22 02:17	CH	EET MID

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3143-1  
SDG: 03D2057010

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3143-1	PH02	Solid	10/04/22 10:05	10/05/22 09:10	3'
890-3143-2	PH02	Solid	10/04/22 10:30	10/05/22 09:10	12'

---

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



Environment Testing  
Xenco

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

Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 2

Project Manager: Katei Jennings  
Company Name: Ensolum, LLC  
Address: 601 N Marientfeld St Suite 400  
City, State ZIP: Midland, TX 79701  
Phone: \_\_\_\_\_  
Email: kjennings@ensolum.com

Bill to: (if different)  
Company Name: Ensolum, LLC  
Address: 601 N Marientfeld St Suite 400  
City, State ZIP: Midland, TX 79701

Program: UST/PST  PRP  Brownfields  RRC  Superfund   
State of Project: \_\_\_\_\_  
Reporting: Level II  Level III  PST/UST  TRRP  Level IV   
Deliverables: EDD  ADAPT  Other: \_\_\_\_\_

Project Name: MCA 94  
Project Number: 03D2057010  
Project Location: Corner Shore  
Sampler's Name: \_\_\_\_\_  
PO #: \_\_\_\_\_  
Turn Around:  Routine  Rush  
Due Date: \_\_\_\_\_  
TAT starts the day received by the lab, if received by 4:30pm  
Temp Blank:  Yes  No  
Thermometer ID: TH-007  
Cooler Custody Seals: Yes  No  N/A  
Correction Factor: 1.8  
Sample Custody Seals: Yes  No  N/A  
Temperature Reading: 1.8  
Corrected Temperature: 1.8  
Total Containers: \_\_\_\_\_

Parameters  
CHLORIDES (EPA: 300.0)  
TPH (8015)  
BTEX (8021)

ANALYSIS REQUEST

Preservative Codes  
None: NO  
Cool: Cool  
HCL: HC  
H<sub>2</sub>SO<sub>4</sub>: H<sub>2</sub>  
H<sub>2</sub>PO<sub>4</sub>: HP  
NaHSO<sub>4</sub>: NABIS  
Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub>: NASO<sub>5</sub>  
Zn Acetate+NaOH: Zn  
NaOH+Ascorbic Acid: SAPC  
DI Water: H<sub>2</sub>O  
MeOH: Me  
HNO<sub>3</sub>: HN  
NaOH: Na

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	ANALYSIS REQUEST	Preservative Codes	Sample Comments
PH02	S	10.04.22	1005	3'	G	2	CHLORIDES (EPA: 300.0) TPH (8015) BTEX (8021)			
PH02	S	10.04.22	1030	12'	G	2				Incident Number NAPP2212531906

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$55.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	10/13/22 0918	<i>[Signature]</i>	<i>[Signature]</i>	

Revised Date: 06/25/2020 Rev: 2020.2



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3143-1

SDG Number: 03D2057010

**Login Number: 3143**

**List Number: 1**

**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3143-1

SDG Number: 03D2057010

**Login Number: 3143**

**List Number: 2**

**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

**List Creation: 10/06/22 10:20 AM**

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



## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3144-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



---

Authorized for release by:  
10/13/2022 10:49:01 AM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	7
QC Sample Results . . . . .	8
QC Association Summary . . . . .	12
Lab Chronicle . . . . .	14
Certification Summary . . . . .	15
Method Summary . . . . .	16
Sample Summary . . . . .	17
Chain of Custody . . . . .	18
Receipt Checklists . . . . .	19

# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

## Qualifiers

### GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

---

**Job ID: 890-3144-1**

---

**Laboratory: Eurofins Carlsbad**

---

**Narrative**

**Job Narrative  
890-3144-1**

**Receipt**

The samples were received on 10/5/2022 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: PH03 (890-3144-1) and PH03 (890-3144-2).

**GC VOA**

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

**GC Semi VOA**

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

**HPLC/IC**

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



# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

**Client Sample ID: PH03**

**Lab Sample ID: 890-3144-1**

Date Collected: 10/04/22 11:00

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 10'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U F2 F1	0.00201	mg/Kg		10/10/22 13:52	10/12/22 23:25	1
Toluene	<0.00201	U F1	0.00201	mg/Kg		10/10/22 13:52	10/12/22 23:25	1
Ethylbenzene	<0.00201	U F1	0.00201	mg/Kg		10/10/22 13:52	10/12/22 23:25	1
m-Xylene & p-Xylene	<0.00402	U F1	0.00402	mg/Kg		10/10/22 13:52	10/12/22 23:25	1
o-Xylene	<0.00201	U F1	0.00201	mg/Kg		10/10/22 13:52	10/12/22 23:25	1
Xylenes, Total	<0.00402	U F1	0.00402	mg/Kg		10/10/22 13:52	10/12/22 23:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	93		70 - 130			10/10/22 13:52	10/12/22 23:25	1
1,4-Difluorobenzene (Surr)	99		70 - 130			10/10/22 13:52	10/12/22 23:25	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/13/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 16:55	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 16:55	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 16:55	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	88		70 - 130			10/06/22 08:43	10/06/22 16:55	1
o-Terphenyl	95		70 - 130			10/06/22 08:43	10/06/22 16:55	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9320		99.4	mg/Kg			10/07/22 12:27	20

**Client Sample ID: PH03**

**Lab Sample ID: 890-3144-2**

Date Collected: 10/04/22 11:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:46	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		10/10/22 13:52	10/12/22 23:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:46	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		10/10/22 13:52	10/12/22 23:46	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	119		70 - 130			10/10/22 13:52	10/12/22 23:46	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

**Client Sample ID: PH03**

**Lab Sample ID: 890-3144-2**

Date Collected: 10/04/22 11:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	87		70 - 130	10/10/22 13:52	10/12/22 23:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/13/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 17:16	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 17:16	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 17:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130	10/06/22 08:43	10/06/22 17:16	1
o-Terphenyl	93		70 - 130	10/06/22 08:43	10/06/22 17:16	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8940		49.8	mg/Kg			10/07/22 12:33	10



# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BFB1 (70-130)	DFBZ1 (70-130)
890-3144-1	PH03	93	99
890-3144-1 MS	PH03	117	97
890-3144-1 MSD	PH03	85	95
890-3144-2	PH03	119	87
LCS 880-36591/1-A	Lab Control Sample	96	104
LCSD 880-36591/2-A	Lab Control Sample Dup	96	100
MB 880-36589/5-A	Method Blank	90	94
MB 880-36591/5-A	Method Blank	88	94

**Surrogate Legend**

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

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

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		1CO1 (70-130)	OTPH1 (70-130)
880-19921-A-8-B MS	Matrix Spike	84	80
880-19921-A-8-C MSD	Matrix Spike Duplicate	86	82
890-3144-1	PH03	88	95
890-3144-2	PH03	87	93
LCS 880-36227/2-A	Lab Control Sample	85	90
LCSD 880-36227/3-A	Lab Control Sample Dup	99	106
MB 880-36227/1-A	Method Blank	105	114

**Surrogate Legend**

1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36589/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36589**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
	<b>MB</b>	<b>MB</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	90		70 - 130			10/10/22 13:30	10/12/22 11:31	1
1,4-Difluorobenzene (Surr)	94		70 - 130			10/10/22 13:30	10/12/22 11:31	1

**Lab Sample ID: MB 880-36591/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36591**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
	<b>MB</b>	<b>MB</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	88		70 - 130			10/10/22 13:52	10/12/22 23:04	1
1,4-Difluorobenzene (Surr)	94		70 - 130			10/10/22 13:52	10/12/22 23:04	1

**Lab Sample ID: LCS 880-36591/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36591**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	0.100	0.09785		mg/Kg		98	70 - 130
Ethylbenzene	0.100	0.09422		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1941		mg/Kg		97	70 - 130
o-Xylene	0.100	0.1122		mg/Kg		112	70 - 130
	<b>LCS</b>	<b>LCS</b>					
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	96		70 - 130				
1,4-Difluorobenzene (Surr)	104		70 - 130				

**Lab Sample ID: LCSD 880-36591/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36591**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Benzene	0.100	0.09337		mg/Kg		93	70 - 130	17	35

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

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

Lab Sample ID: LCSD 880-36591/2-A

Matrix: Solid

Analysis Batch: 36716

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36591

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.08557		mg/Kg		86	70 - 130	13	35	
Ethylbenzene	0.100	0.08075		mg/Kg		81	70 - 130	15	35	
m-Xylene & p-Xylene	0.200	0.1627		mg/Kg		81	70 - 130	18	35	
o-Xylene	0.100	0.09260		mg/Kg		93	70 - 130	19	35	
<b>LCSD LCSD</b>										
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
4-Bromofluorobenzene (Surr)	96		70 - 130							
1,4-Difluorobenzene (Surr)	100		70 - 130							

Lab Sample ID: 890-3144-1 MS

Matrix: Solid

Analysis Batch: 36716

Client Sample ID: PH03

Prep Type: Total/NA

Prep Batch: 36591

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00201	U F2 F1	0.100	0.07974		mg/Kg		79	70 - 130		35	
Toluene	<0.00201	U F1	0.100	0.08047		mg/Kg		80	70 - 130		35	
Ethylbenzene	<0.00201	U F1	0.100	0.08454		mg/Kg		84	70 - 130		35	
m-Xylene & p-Xylene	<0.00402	U F1	0.201	0.1817		mg/Kg		91	70 - 130		35	
o-Xylene	<0.00201	U F1	0.100	0.1046		mg/Kg		104	70 - 130		35	
<b>MS MS</b>												
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	117		70 - 130									
1,4-Difluorobenzene (Surr)	97		70 - 130									

Lab Sample ID: 890-3144-1 MSD

Matrix: Solid

Analysis Batch: 36716

Client Sample ID: PH03

Prep Type: Total/NA

Prep Batch: 36591

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Benzene	<0.00201	U F2 F1	0.0990	<0.00198	U F2 F1	mg/Kg		0.4	70 - 130	198	35	
Toluene	<0.00201	U F1	0.0990	<0.00198	U F1	mg/Kg		0	70 - 130	NC	35	
Ethylbenzene	<0.00201	U F1	0.0990	<0.00198	U F1	mg/Kg		0	70 - 130	NC	35	
m-Xylene & p-Xylene	<0.00402	U F1	0.198	<0.00396	U F1	mg/Kg		0	70 - 130	NC	35	
o-Xylene	<0.00201	U F1	0.0990	<0.00198	U F1	mg/Kg		0	70 - 130	NC	35	
<b>MSD MSD</b>												
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>									
4-Bromofluorobenzene (Surr)	85		70 - 130									
1,4-Difluorobenzene (Surr)	95		70 - 130									

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

Lab Sample ID: MB 880-36227/1-A

Matrix: Solid

Analysis Batch: 36218

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36227

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36227/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
1-Chlorooctane	105		70 - 130			10/06/22 08:43	10/06/22 09:43	1
o-Terphenyl	114		70 - 130			10/06/22 08:43	10/06/22 09:43	1

**Lab Sample ID: LCS 880-36227/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics (Over C10-C28)	1000	835.9		mg/Kg		84	70 - 130
Surrogate	LCS	LCS	Limits			%Rec	
	%Recovery	Qualifier					
1-Chlorooctane	85		70 - 130				
o-Terphenyl	90		70 - 130				

**Lab Sample ID: LCSD 880-36227/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Diesel Range Organics (Over C10-C28)	1000	915.3		mg/Kg		92	70 - 130	9	20
Surrogate	LCSD	LCSD	Limits			%Rec		RPD	Limit
	%Recovery	Qualifier							
1-Chlorooctane	99		70 - 130						
o-Terphenyl	106		70 - 130						

**Lab Sample ID: 880-19921-A-8-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1025		mg/Kg		100	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	838.6		mg/Kg		81	70 - 130
Surrogate	MS	MS	Limits					%Rec	
	%Recovery	Qualifier							
1-Chlorooctane	84		70 - 130						
o-Terphenyl	80		70 - 130						

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

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

**Lab Sample ID: 880-19921-A-8-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36218**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 36227**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1051		mg/Kg		103	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	868.5		mg/Kg		84	70 - 130	4	20
Surrogate	MSD	MSD									
	%Recovery	Qualifier	Limits								
1-Chlorooctane	86		70 - 130								
o-Terphenyl	82		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-36287/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36379**

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

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			10/07/22 10:29	1

**Lab Sample ID: LCS 880-36287/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36379**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Chloride	250	225.7		mg/Kg		90	90 - 110		

**Lab Sample ID: LCSD 880-36287/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36379**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	Limit
		Result	Qualifier				Limits		
Chloride	250	230.8		mg/Kg		92	90 - 110	2	20

**Lab Sample ID: 880-20057-A-1-F MS**  
**Matrix: Solid**  
**Analysis Batch: 36379**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	66.1		248	307.7		mg/Kg		97	90 - 110		

**Lab Sample ID: 880-20057-A-1-G MSD**  
**Matrix: Solid**  
**Analysis Batch: 36379**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloride	66.1		248	322.7		mg/Kg		103	90 - 110	5	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36589/5-A	Method Blank	Total/NA	Solid	5035	

### Prep Batch: 36591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Total/NA	Solid	5035	
890-3144-2	PH03	Total/NA	Solid	5035	
MB 880-36591/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36591/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36591/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3144-1 MS	PH03	Total/NA	Solid	5035	
890-3144-1 MSD	PH03	Total/NA	Solid	5035	

### Analysis Batch: 36716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Total/NA	Solid	8021B	36591
890-3144-2	PH03	Total/NA	Solid	8021B	36591
MB 880-36589/5-A	Method Blank	Total/NA	Solid	8021B	36589
MB 880-36591/5-A	Method Blank	Total/NA	Solid	8021B	36591
LCS 880-36591/1-A	Lab Control Sample	Total/NA	Solid	8021B	36591
LCSD 880-36591/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36591
890-3144-1 MS	PH03	Total/NA	Solid	8021B	36591
890-3144-1 MSD	PH03	Total/NA	Solid	8021B	36591

### Analysis Batch: 36859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Total/NA	Solid	Total BTEX	
890-3144-2	PH03	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Analysis Batch: 36218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Total/NA	Solid	8015B NM	36227
890-3144-2	PH03	Total/NA	Solid	8015B NM	36227
MB 880-36227/1-A	Method Blank	Total/NA	Solid	8015B NM	36227
LCS 880-36227/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36227
LCSD 880-36227/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36227
880-19921-A-8-B MS	Matrix Spike	Total/NA	Solid	8015B NM	36227
880-19921-A-8-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36227

### Prep Batch: 36227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Total/NA	Solid	8015NM Prep	
890-3144-2	PH03	Total/NA	Solid	8015NM Prep	
MB 880-36227/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36227/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36227/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19921-A-8-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19921-A-8-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

## GC Semi VOA

### Analysis Batch: 36343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Total/NA	Solid	8015 NM	
890-3144-2	PH03	Total/NA	Solid	8015 NM	

## HPLC/IC

### Leach Batch: 36287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Soluble	Solid	DI Leach	
890-3144-2	PH03	Soluble	Solid	DI Leach	
MB 880-36287/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36287/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36287/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-20057-A-1-F MS	Matrix Spike	Soluble	Solid	DI Leach	
880-20057-A-1-G MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 36379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3144-1	PH03	Soluble	Solid	300.0	36287
890-3144-2	PH03	Soluble	Solid	300.0	36287
MB 880-36287/1-A	Method Blank	Soluble	Solid	300.0	36287
LCS 880-36287/2-A	Lab Control Sample	Soluble	Solid	300.0	36287
LCSD 880-36287/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36287
880-20057-A-1-F MS	Matrix Spike	Soluble	Solid	300.0	36287
880-20057-A-1-G MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36287

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

**Client Sample ID: PH03**

**Lab Sample ID: 890-3144-1**

**Date Collected: 10/04/22 11:00**

**Matrix: Solid**

**Date Received: 10/05/22 09:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	36591	10/10/22 13:52	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36716	10/12/22 23:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36859	10/13/22 11:29	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36343	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 16:55	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36287	10/06/22 15:32	KS	EET MID
Soluble	Analysis	300.0		20			36379	10/07/22 12:27	CH	EET MID

**Client Sample ID: PH03**

**Lab Sample ID: 890-3144-2**

**Date Collected: 10/04/22 11:30**

**Matrix: Solid**

**Date Received: 10/05/22 09:10**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	36591	10/10/22 13:52	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36716	10/12/22 23:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36859	10/13/22 11:29	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36343	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 17:16	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	36287	10/06/22 15:32	KS	EET MID
Soluble	Analysis	300.0		10			36379	10/07/22 12:33	CH	EET MID

**Laboratory References:**

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



# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3144-1  
SDG: 03D2057010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3144-1	PH03	Solid	10/04/22 11:00	10/05/22 09:10	10'
890-3144-2	PH03	Solid	10/04/22 11:30	10/05/22 09:10	12'

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



Environment Testing  
Xenco

Chain of Custody

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

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Katei Jennings	Bill to: (if different)	Katei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marlenfeld St Suite 400	Address:	601 N Marlenfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:		Email:	kjennings@ensolum.com

Work Order Comments	
Program: UST/PST	<input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	
Reporting: Level II	<input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables: EDD	<input type="checkbox"/> ADAPT <input type="checkbox"/> Other:

Project Name:	MCA 94	Turn Around	Pres. Code
Project Number:	03D2057010	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:		Due Date:	
Sampler's Name:	Corner Shore	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT	Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	(Yes) No	Thermometer ID:	TN-007	
Cooler Custody Seals:	Yes No	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No	Temperature Reading:	1.8	
Total Containers:		Corrected Temperature:	1.6	

ANALYSIS REQUEST	
CHLORIDES (EPA: 300.0)	<input type="checkbox"/>
TPH (8015)	<input type="checkbox"/>
BTEX (8021)	<input type="checkbox"/>
PRESERVATIVE CODES	
None: NO	DI Water: H <sub>2</sub> O
Cool: Cool	MeOH: Me
HCL: HC	HNO <sub>3</sub> : HN
H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	NaOH: Na
H <sub>3</sub> PO <sub>4</sub> : HP	
NaHSO <sub>4</sub> : NABIS	
Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> : NASO <sub>3</sub>	
Zn Acetate+NaOH: Zn	
NaOH+Ascorbic Acid: SAPC	



Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Sample Comments
PH03	S	10.04.22	1100	10'	G	2	CHLORIDES (EPA: 300.0)	
PH03	S	10.04.22	1130	12'	G	2	TPH (8015)	
							BTEX (8021)	
								Incident Number NAPP2212531906

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$65.00 will be applied to each project and a charge of \$6 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/5/22 0910			

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3144-1

SDG Number: 03D2057010

**Login Number: 3144**

**List Number: 1**

**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3144-1

SDG Number: 03D2057010

**Login Number: 3144**

**List Number: 2**

**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

**List Creation: 10/06/22 10:20 AM**

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



## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3145-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



---

Authorized for release by:  
10/13/2022 10:49:02 AM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	7
QC Sample Results . . . . .	8
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	16
Certification Summary . . . . .	17
Method Summary . . . . .	18
Sample Summary . . . . .	19
Chain of Custody . . . . .	20
Receipt Checklists . . . . .	21



# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

## Qualifiers

### GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

---

**Job ID: 890-3145-1**

---

**Laboratory: Eurofins Carlsbad**

---

**Narrative**

**Job Narrative**  
**890-3145-1**

**Receipt**

The samples were received on 10/5/2022 9:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: PH04 (890-3145-1) and PH04 (890-3145-2).

**GC VOA**

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

**GC Semi VOA**

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

**HPLC/IC**

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36242 and 880-36242 and analytical batch 880-36598 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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



# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

**Client Sample ID: PH04**

**Lab Sample ID: 890-3145-1**

Date Collected: 10/04/22 13:00

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 8'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/13/22 00:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/13/22 00:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/13/22 00:06	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/10/22 13:52	10/13/22 00:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/13/22 00:06	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/10/22 13:52	10/13/22 00:06	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	106		70 - 130			10/10/22 13:52	10/13/22 00:06	1
1,4-Difluorobenzene (Surr)	86		70 - 130			10/10/22 13:52	10/13/22 00:06	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/13/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 17:36	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 17:36	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/06/22 08:43	10/06/22 17:36	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	86		70 - 130			10/06/22 08:43	10/06/22 17:36	1
o-Terphenyl	92		70 - 130			10/06/22 08:43	10/06/22 17:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10300		100	mg/Kg			10/11/22 08:20	20

**Client Sample ID: PH04**

**Lab Sample ID: 890-3145-2**

Date Collected: 10/04/22 13:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:52	10/13/22 00:26	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:52	10/13/22 00:26	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:52	10/13/22 00:26	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/10/22 13:52	10/13/22 00:26	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/10/22 13:52	10/13/22 00:26	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/10/22 13:52	10/13/22 00:26	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	94		70 - 130			10/10/22 13:52	10/13/22 00:26	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

**Client Sample ID: PH04**

**Lab Sample ID: 890-3145-2**

Date Collected: 10/04/22 13:30

Matrix: Solid

Date Received: 10/05/22 09:10

Sample Depth: 12'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	93		70 - 130	10/10/22 13:52	10/13/22 00:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/13/22 11:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/07/22 09:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/06/22 08:43	10/06/22 17:57	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/06/22 08:43	10/06/22 17:57	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/06/22 08:43	10/06/22 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130	10/06/22 08:43	10/06/22 17:57	1
o-Terphenyl	94		70 - 130	10/06/22 08:43	10/06/22 17:57	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7190		49.8	mg/Kg			10/12/22 12:09	10

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3144-A-1-D MS	Matrix Spike	117	97
890-3144-A-1-E MSD	Matrix Spike Duplicate	85	95
890-3145-1	PH04	106	86
890-3145-2	PH04	94	93
LCS 880-36591/1-A	Lab Control Sample	96	104
LCSD 880-36591/2-A	Lab Control Sample Dup	96	100
MB 880-36589/5-A	Method Blank	90	94
MB 880-36591/5-A	Method Blank	88	94

**Surrogate Legend**

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

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-19921-A-8-B MS	Matrix Spike	84	80
880-19921-A-8-C MSD	Matrix Spike Duplicate	86	82
890-3145-1	PH04	86	92
890-3145-2	PH04	88	94
890-3145-2 MS	PH04	77	73
890-3145-2 MSD	PH04	89	74
LCS 880-36227/2-A	Lab Control Sample	85	90
LCS 880-36321/2-A	Lab Control Sample	102	93
LCSD 880-36227/3-A	Lab Control Sample Dup	99	106
LCSD 880-36321/3-A	Lab Control Sample Dup	102	87
MB 880-36227/1-A	Method Blank	105	114
MB 880-36321/1-A	Method Blank	90	89

**Surrogate Legend**

1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36589/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36589**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:30	10/12/22 11:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 13:30	10/12/22 11:31	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	90		70 - 130	10/10/22 13:30	10/12/22 11:31	1
1,4-Difluorobenzene (Surr)	94		70 - 130	10/10/22 13:30	10/12/22 11:31	1

**Lab Sample ID: MB 880-36591/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36591**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 13:52	10/12/22 23:04	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 13:52	10/12/22 23:04	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	88		70 - 130	10/10/22 13:52	10/12/22 23:04	1
1,4-Difluorobenzene (Surr)	94		70 - 130	10/10/22 13:52	10/12/22 23:04	1

**Lab Sample ID: LCS 880-36591/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36591**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	0.100	0.09785		mg/Kg		98	70 - 130
Ethylbenzene	0.100	0.09422		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1941		mg/Kg		97	70 - 130
o-Xylene	0.100	0.1122		mg/Kg		112	70 - 130

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

**Lab Sample ID: LCSD 880-36591/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36716**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36591**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Benzene	0.100	0.09337		mg/Kg		93	70 - 130	17	35

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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

Lab Sample ID: LCSD 880-36591/2-A

Matrix: Solid

Analysis Batch: 36716

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 36591

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.08557		mg/Kg		86	70 - 130	13	35
Ethylbenzene	0.100	0.08075		mg/Kg		81	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1627		mg/Kg		81	70 - 130	18	35
o-Xylene	0.100	0.09260		mg/Kg		93	70 - 130	19	35
<b>LCSD LCSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	96		70 - 130						
1,4-Difluorobenzene (Surr)	100		70 - 130						

Lab Sample ID: 890-3144-A-1-D MS

Matrix: Solid

Analysis Batch: 36716

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 36591

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U F2 F1	0.100	0.07974		mg/Kg		79	70 - 130
Toluene	<0.00201	U F1	0.100	0.08047		mg/Kg		80	70 - 130
Ethylbenzene	<0.00201	U F1	0.100	0.08454		mg/Kg		84	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.201	0.1817		mg/Kg		91	70 - 130
o-Xylene	<0.00201	U F1	0.100	0.1046		mg/Kg		104	70 - 130
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	117		70 - 130						
1,4-Difluorobenzene (Surr)	97		70 - 130						

Lab Sample ID: 890-3144-A-1-E MSD

Matrix: Solid

Analysis Batch: 36716

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 36591

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F2 F1	0.0990	<0.00198	U F2 F1	mg/Kg		0.4	70 - 130	198	35
Toluene	<0.00201	U F1	0.0990	<0.00198	U F1	mg/Kg		0	70 - 130	NC	35
Ethylbenzene	<0.00201	U F1	0.0990	<0.00198	U F1	mg/Kg		0	70 - 130	NC	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	<0.00396	U F1	mg/Kg		0	70 - 130	NC	35
o-Xylene	<0.00201	U F1	0.0990	<0.00198	U F1	mg/Kg		0	70 - 130	NC	35
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
4-Bromofluorobenzene (Surr)	85		70 - 130								
1,4-Difluorobenzene (Surr)	95		70 - 130								

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

Lab Sample ID: MB 880-36227/1-A

Matrix: Solid

Analysis Batch: 36218

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 36227

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36227/1-A**

**Matrix: Solid**

**Analysis Batch: 36218**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 36227**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/06/22 08:43	10/06/22 09:43	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	105		70 - 130	10/06/22 08:43	10/06/22 09:43	1
o-Terphenyl	114		70 - 130	10/06/22 08:43	10/06/22 09:43	1

**Lab Sample ID: LCS 880-36227/2-A**

**Matrix: Solid**

**Analysis Batch: 36218**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 36227**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics (Over C10-C28)	1000	835.9		mg/Kg		84	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1-Chlorooctane	85		70 - 130
o-Terphenyl	90		70 - 130

**Lab Sample ID: LCSD 880-36227/3-A**

**Matrix: Solid**

**Analysis Batch: 36218**

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

**Prep Type: Total/NA**

**Prep Batch: 36227**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics (Over C10-C28)	1000	915.3		mg/Kg		92	70 - 130	9	20

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

**Lab Sample ID: 880-19921-A-8-B MS**

**Matrix: Solid**

**Analysis Batch: 36218**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 36227**

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1025		mg/Kg		100	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	838.6		mg/Kg		81	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1-Chlorooctane	84		70 - 130
o-Terphenyl	80		70 - 130



# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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

Lab Sample ID: 880-19921-A-8-C MSD  
Matrix: Solid  
Analysis Batch: 36218

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 36227

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	1051		mg/Kg		103	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	868.5		mg/Kg		84	70 - 130	4	20
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	86		70 - 130								
o-Terphenyl	82		70 - 130								

Lab Sample ID: MB 880-36321/1-A  
Matrix: Solid  
Analysis Batch: 36313

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 36321

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/07/22 07:40	10/07/22 09:54	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/07/22 07:40	10/07/22 09:54	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/07/22 07:40	10/07/22 09:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			10/07/22 07:40	10/07/22 09:54	1
o-Terphenyl	89		70 - 130			10/07/22 07:40	10/07/22 09:54	1

Lab Sample ID: LCS 880-36321/2-A  
Matrix: Solid  
Analysis Batch: 36313

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 36321

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	859.3		mg/Kg		86	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	1064		mg/Kg		106	70 - 130	
Surrogate	%Recovery	Qualifier	Limits					
1-Chlorooctane	102		70 - 130					
o-Terphenyl	93		70 - 130					

Lab Sample ID: LCSD 880-36321/3-A  
Matrix: Solid  
Analysis Batch: 36313

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 36321

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	825.5		mg/Kg		83	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	989.6		mg/Kg		99	70 - 130	7	20

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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

**Lab Sample ID: LCSD 880-36321/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36313**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36321**

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	102		70 - 130
o-Terphenyl	87		70 - 130

**Lab Sample ID: 890-3145-2 MS**  
**Matrix: Solid**  
**Analysis Batch: 36313**

**Client Sample ID: PH04**  
**Prep Type: Total/NA**  
**Prep Batch: 36321**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	816.5		mg/Kg		82		70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	810.5		mg/Kg		81		70 - 130

Surrogate	MS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	77		70 - 130
o-Terphenyl	73		70 - 130

**Lab Sample ID: 890-3145-2 MSD**  
**Matrix: Solid**  
**Analysis Batch: 36313**

**Client Sample ID: PH04**  
**Prep Type: Total/NA**  
**Prep Batch: 36321**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier								
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	999	847.6		mg/Kg		85		70 - 130	4		20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	830.8		mg/Kg		83		70 - 130	2		20

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	89		70 - 130
o-Terphenyl	74		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-36242/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

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

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier							
Chloride	<5.00	U	5.00	mg/Kg			10/11/22 07:11		1

**Lab Sample ID: LCS 880-36242/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	Limits
		Result	Qualifier					
Chloride	250	260.6		mg/Kg		104		90 - 110

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCSD 880-36242/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	260.8		mg/Kg		104	90 - 110	0	20

**Lab Sample ID: 890-3142-A-1-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5800	F1	2490	9310	F1	mg/Kg		141	90 - 110

**Lab Sample ID: 890-3142-A-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5800	F1	2490	9291	F1	mg/Kg		140	90 - 110	0	20

**Lab Sample ID: 890-3147-A-4-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	8500	F1	5000	18090	F1	mg/Kg		192	90 - 110

**Lab Sample ID: 890-3147-A-4-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	8500	F1	5000	17000	F1	mg/Kg		170	90 - 110	6	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36589/5-A	Method Blank	Total/NA	Solid	5035	

### Prep Batch: 36591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Total/NA	Solid	5035	
890-3145-2	PH04	Total/NA	Solid	5035	
MB 880-36591/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36591/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36591/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3144-A-1-D MS	Matrix Spike	Total/NA	Solid	5035	
890-3144-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 36716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Total/NA	Solid	8021B	36591
890-3145-2	PH04	Total/NA	Solid	8021B	36591
MB 880-36589/5-A	Method Blank	Total/NA	Solid	8021B	36589
MB 880-36591/5-A	Method Blank	Total/NA	Solid	8021B	36591
LCS 880-36591/1-A	Lab Control Sample	Total/NA	Solid	8021B	36591
LCSD 880-36591/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36591
890-3144-A-1-D MS	Matrix Spike	Total/NA	Solid	8021B	36591
890-3144-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36591

### Analysis Batch: 36860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Total/NA	Solid	Total BTEX	
890-3145-2	PH04	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Analysis Batch: 36218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Total/NA	Solid	8015B NM	36227
890-3145-2	PH04	Total/NA	Solid	8015B NM	36227
MB 880-36227/1-A	Method Blank	Total/NA	Solid	8015B NM	36227
LCS 880-36227/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36227
LCSD 880-36227/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36227
880-19921-A-8-B MS	Matrix Spike	Total/NA	Solid	8015B NM	36227
880-19921-A-8-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36227

### Prep Batch: 36227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Total/NA	Solid	8015NM Prep	
890-3145-2	PH04	Total/NA	Solid	8015NM Prep	
MB 880-36227/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36227/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36227/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-19921-A-8-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-19921-A-8-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

## GC Semi VOA

### Analysis Batch: 36313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36321/1-A	Method Blank	Total/NA	Solid	8015B NM	36321
LCS 880-36321/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36321
LCSD 880-36321/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36321
890-3145-2 MS	PH04	Total/NA	Solid	8015B NM	36321
890-3145-2 MSD	PH04	Total/NA	Solid	8015B NM	36321

### Prep Batch: 36321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36321/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36321/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36321/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3145-2 MS	PH04	Total/NA	Solid	8015NM Prep	
890-3145-2 MSD	PH04	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 36344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Total/NA	Solid	8015 NM	
890-3145-2	PH04	Total/NA	Solid	8015 NM	

## HPLC/IC

### Leach Batch: 36242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Soluble	Solid	DI Leach	
890-3145-2	PH04	Soluble	Solid	DI Leach	
MB 880-36242/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36242/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36242/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3142-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3142-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-3147-A-4-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3147-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 36598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3145-1	PH04	Soluble	Solid	300.0	36242
890-3145-2	PH04	Soluble	Solid	300.0	36242
MB 880-36242/1-A	Method Blank	Soluble	Solid	300.0	36242
LCS 880-36242/2-A	Lab Control Sample	Soluble	Solid	300.0	36242
LCSD 880-36242/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36242
890-3142-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	36242
890-3142-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36242
890-3147-A-4-B MS	Matrix Spike	Soluble	Solid	300.0	36242
890-3147-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36242

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

**Client Sample ID: PH04**

**Lab Sample ID: 890-3145-1**

Date Collected: 10/04/22 13:00

Matrix: Solid

Date Received: 10/05/22 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	36591	10/10/22 13:52	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36716	10/13/22 00:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36860	10/13/22 11:29	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36344	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 17:36	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		20			36598	10/11/22 08:20	CH	EET MID

**Client Sample ID: PH04**

**Lab Sample ID: 890-3145-2**

Date Collected: 10/04/22 13:30

Matrix: Solid

Date Received: 10/05/22 09:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	36591	10/10/22 13:52	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36716	10/13/22 00:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36860	10/13/22 11:29	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36344	10/07/22 09:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	36227	10/06/22 08:43	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36218	10/06/22 17:57	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		10			36598	10/12/22 12:09	CH	EET MID

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3145-1  
SDG: 03D2057010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3145-1	PH04	Solid	10/04/22 13:00	10/05/22 09:10	8'
890-3145-2	PH04	Solid	10/04/22 13:30	10/05/22 09:10	12'

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



Environment Testing  
Xenco

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

### Chain of Custody

Work Order No: \_\_\_\_\_

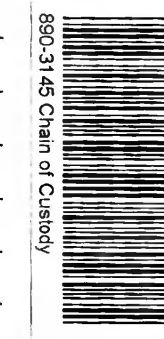
www.xenco.com Page 1 of 1

Project Manager:	Katei Jennings	Bill to: (if different)	Katei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marientfeld St Suite 400	Address:	601 N Marientfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:		Email:	kjennings@ensolum.com

<b>Work Order Comments</b>	
Program:	UST/PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	
Reporting:	Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____

Project Name:	MCA 94	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	03D2057010	Due Date:			
Project Location:	Comer Shore	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:		Well Ice:	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
PO #:		Thermometer ID:	17M-001		

<b>SAMPLE RECEIPT</b>		Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:	1.8
Samples Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading:	1.6		
Cooler Custody Seals:	Yes No N/A	Corrected Temperature:			
Sample Custody Seals:	Yes No	Total Containers:			



Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	ANALYSIS REQUEST	Preservative Codes	Sample Comments
PH04	S	10.04.22	1300	8'	G	2	CHLORIDES (EPA: 300.0)	None: NO Cool: Cool HCL: HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> : NASO <sub>5</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SACP	
PH04	S	10.04.22	1330	12'	G	2	TPH (8015)		Incident Number NAPP2212531906
							BTEX (8021)		

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

Notes: 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 \$35.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10/5/22 0915			

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3145-1

SDG Number: 03D2057010

**Login Number: 3145**

**List Number: 1**

**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3145-1

SDG Number: 03D2057010

**Login Number: 3145**

**List Number: 2**

**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**

**List Creation: 10/06/22 10:20 AM**

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



## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3146-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94  
Revision: 1

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

Attn: Kalei Jennings



Authorized for release by:  
10/17/2022 1:05:37 PM

Jessica Kramer, Project Manager  
(432)704-5440

[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	6
QC Sample Results . . . . .	7
QC Association Summary . . . . .	11
Lab Chronicle . . . . .	13
Certification Summary . . . . .	14
Method Summary . . . . .	15
Sample Summary . . . . .	16
Chain of Custody . . . . .	17
Receipt Checklists . . . . .	18

# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

**Job ID: 890-3146-1**

**Laboratory: Eurofins Carlsbad**

## Narrative

### Job Narrative 890-3146-1

#### REVISION

The report being provided is a revision of the original report sent on 10/12/2022. The report (revision 1) is being revised due to Per client email, requesting TPH re run.

Report revision history

#### **Receipt**

The sample was received on 10/5/2022 9:10 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

#### **Receipt Exceptions**

The following sample was received and analyzed from an unpreserved bulk soil jar: PH05 (890-3146-1).

#### **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: Surrogate recovery for the following sample was outside control limits: (LCS 880-36849/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (880-20328-A-1-B MS) and (880-20328-A-1-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: PH05 (890-3146-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### **HPLC/IC**

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-36242 and analytical batch 880-36598 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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



# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

**Client Sample ID: PH05**  
**Date Collected: 10/04/22 14:00**  
**Date Received: 10/05/22 09:10**  
**Sample Depth: 3'**

**Lab Sample ID: 890-3146-1**  
**Matrix: Solid**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/11/22 14:31	10/12/22 15:52	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/11/22 14:31	10/12/22 15:52	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		10/11/22 14:31	10/12/22 15:52	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		10/11/22 14:31	10/12/22 15:52	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		10/11/22 14:31	10/12/22 15:52	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		10/11/22 14:31	10/12/22 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	10/11/22 14:31	10/12/22 15:52	1
1,4-Difluorobenzene (Surr)	87		70 - 130	10/11/22 14:31	10/12/22 15:52	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/12/22 16:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/07/22 09:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/13/22 10:24	10/15/22 02:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/13/22 10:24	10/15/22 02:26	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/13/22 10:24	10/15/22 02:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	148	S1+	70 - 130	10/13/22 10:24	10/15/22 02:26	1
o-Terphenyl	144	S1+	70 - 130	10/13/22 10:24	10/15/22 02:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	164		4.97	mg/Kg			10/11/22 08:51	1

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
880-20176-A-12-C MS	Matrix Spike	89	90
880-20176-A-12-D MSD	Matrix Spike Duplicate	85	89
890-3146-1	PH05	103	87
LCS 880-36686/1-A	Lab Control Sample	84	90
LCSD 880-36686/2-A	Lab Control Sample Dup	90	90
MB 880-36686/5-A	Method Blank	103	84

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
880-20328-A-1-B MS	Matrix Spike	197 S1+	189 S1+
880-20328-A-1-C MSD	Matrix Spike Duplicate	192 S1+	186 S1+
890-3146-1	PH05	148 S1+	144 S1+
LCS 880-36849/2-A	Lab Control Sample	69 S1-	86
LCSD 880-36849/3-A	Lab Control Sample Dup	82	97
MB 880-36849/1-A	Method Blank	121	130

#### Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36686/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36715**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36686**

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:31	10/12/22 11:01	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:31	10/12/22 11:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:31	10/12/22 11:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/11/22 14:31	10/12/22 11:01	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:31	10/12/22 11:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/11/22 14:31	10/12/22 11:01	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	103		70 - 130	10/11/22 14:31	10/12/22 11:01	1
1,4-Difluorobenzene (Surr)	84		70 - 130	10/11/22 14:31	10/12/22 11:01	1

**Lab Sample ID: LCS 880-36686/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36715**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36686**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.1008		mg/Kg		101	70 - 130
Toluene	0.100	0.1020		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.09606		mg/Kg		96	70 - 130
m-Xylene & p-Xylene	0.200	0.1983		mg/Kg		99	70 - 130
o-Xylene	0.100	0.09918		mg/Kg		99	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	84		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

**Lab Sample ID: LCSD 880-36686/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36715**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36686**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	0.100	0.1024		mg/Kg		102	70 - 130	2	35
Toluene	0.100	0.1064		mg/Kg		106	70 - 130	4	35
Ethylbenzene	0.100	0.09847		mg/Kg		98	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2051		mg/Kg		103	70 - 130	3	35
o-Xylene	0.100	0.1011		mg/Kg		101	70 - 130	2	35

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

**Lab Sample ID: 880-20176-A-12-C MS**  
**Matrix: Solid**  
**Analysis Batch: 36715**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36686**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.00201	U	0.0998	0.1018		mg/Kg		102	70 - 130
Toluene	<0.00201	U	0.0998	0.1041		mg/Kg		104	70 - 130

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

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

**Lab Sample ID: 880-20176-A-12-C MS**  
**Matrix: Solid**  
**Analysis Batch: 36715**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36686**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier		Result	Qualifier					
Ethylbenzene	<0.00201	U	0.0998	0.09844		mg/Kg		99		70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2047		mg/Kg		103		70 - 130
o-Xylene	<0.00201	U	0.0998	0.1010		mg/Kg		101		70 - 130
<b>MS MS</b>										
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	89		70 - 130							
1,4-Difluorobenzene (Surr)	90		70 - 130							

**Lab Sample ID: 880-20176-A-12-D MSD**  
**Matrix: Solid**  
**Analysis Batch: 36715**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 36686**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier							
Benzene	<0.00201	U	0.0996	0.09470		mg/Kg		95		70 - 130	7	35
Toluene	<0.00201	U	0.0996	0.09624		mg/Kg		97		70 - 130	8	35
Ethylbenzene	<0.00201	U	0.0996	0.09061		mg/Kg		91		70 - 130	8	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1862		mg/Kg		93		70 - 130	9	35
o-Xylene	<0.00201	U	0.0996	0.09149		mg/Kg		92		70 - 130	10	35
<b>MSD MSD</b>												
Surrogate	%Recovery	Qualifier	Limits									
4-Bromofluorobenzene (Surr)	85		70 - 130									
1,4-Difluorobenzene (Surr)	89		70 - 130									

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

**Lab Sample ID: MB 880-36849/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36918**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36849**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/13/22 10:24	10/14/22 19:36	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/13/22 10:24	10/14/22 19:36	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/13/22 10:24	10/14/22 19:36	1
<b>MB MB</b>								
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	121		70 - 130	10/13/22 10:24	10/14/22 19:36	1		
o-Terphenyl	130		70 - 130	10/13/22 10:24	10/14/22 19:36	1		

**Lab Sample ID: LCS 880-36849/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36918**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36849**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1101		mg/Kg		110		70 - 130
Diesel Range Organics (Over C10-C28)	1000	1057		mg/Kg		106		70 - 130

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

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

**Lab Sample ID: LCS 880-36849/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36918**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36849**

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	69	S1-	70 - 130
o-Terphenyl	86		70 - 130

**Lab Sample ID: LCSD 880-36849/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36918**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36849**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	1000	991.9		mg/Kg		99	70 - 130	10		20
Diesel Range Organics (Over C10-C28)	1000	1151		mg/Kg		115	70 - 130	8		20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	82		70 - 130
o-Terphenyl	97		70 - 130

**Lab Sample ID: 880-20328-A-1-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36918**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36849**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	871.4		mg/Kg		86	70 - 130			
Diesel Range Organics (Over C10-C28)	<49.8	U	998	1191		mg/Kg		119	70 - 130			

Surrogate	MS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	197	S1+	70 - 130
o-Terphenyl	189	S1+	70 - 130

**Lab Sample ID: 880-20328-A-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36918**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 36849**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	830.5		mg/Kg		82	70 - 130	5		20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	1172		mg/Kg		117	70 - 130	2		20

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	192	S1+	70 - 130
o-Terphenyl	186	S1+	70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-36242/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/11/22 07:11	1

**Lab Sample ID: LCS 880-36242/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	260.6		mg/Kg		104	90 - 110

**Lab Sample ID: LCSD 880-36242/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	260.8		mg/Kg		104	90 - 110	0	20

**Lab Sample ID: 890-3142-A-1-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5800	F1	2490	9310	F1	mg/Kg		141	90 - 110

**Lab Sample ID: 890-3142-A-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36598**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5800	F1	2490	9291	F1	mg/Kg		140	90 - 110	0	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Total/NA	Solid	5035	
MB 880-36686/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36686/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36686/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20176-A-12-C MS	Matrix Spike	Total/NA	Solid	5035	
880-20176-A-12-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 36715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Total/NA	Solid	8021B	36686
MB 880-36686/5-A	Method Blank	Total/NA	Solid	8021B	36686
LCS 880-36686/1-A	Lab Control Sample	Total/NA	Solid	8021B	36686
LCSD 880-36686/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36686
880-20176-A-12-C MS	Matrix Spike	Total/NA	Solid	8021B	36686
880-20176-A-12-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36686

### Analysis Batch: 36794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Analysis Batch: 36333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Total/NA	Solid	8015 NM	

### Prep Batch: 36849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Total/NA	Solid	8015NM Prep	
MB 880-36849/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36849/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36849/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-20328-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-20328-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 36918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Total/NA	Solid	8015B NM	36849
MB 880-36849/1-A	Method Blank	Total/NA	Solid	8015B NM	36849
LCS 880-36849/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36849
LCSD 880-36849/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36849
880-20328-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	36849
880-20328-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36849

## HPLC/IC

### Leach Batch: 36242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Soluble	Solid	DI Leach	
MB 880-36242/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36242/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36242/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Carlsbad

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

## HPLC/IC (Continued)

### Leach Batch: 36242 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3142-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3142-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 36598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3146-1	PH05	Soluble	Solid	300.0	36242
MB 880-36242/1-A	Method Blank	Soluble	Solid	300.0	36242
LCS 880-36242/2-A	Lab Control Sample	Soluble	Solid	300.0	36242
LCSD 880-36242/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36242
890-3142-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	36242
890-3142-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36242



# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

**Client Sample ID: PH05**  
**Date Collected: 10/04/22 14:00**  
**Date Received: 10/05/22 09:10**

**Lab Sample ID: 890-3146-1**  
**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	36686	10/11/22 14:31	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36715	10/12/22 15:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36794	10/12/22 16:23	SM	EET MID
Total/NA	Analysis	8015 NM		1			36333	10/07/22 09:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	36849	10/13/22 10:24	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36918	10/15/22 02:26	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36242	10/06/22 09:53	CH	EET MID
Soluble	Analysis	300.0		1			36598	10/11/22 08:51	CH	EET MID

**Laboratory References:**

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

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

# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3146-1  
SDG: 03D2057010

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3146-1	PH05	Solid	10/04/22 14:00	10/05/22 09:10	3'

---

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



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

### Chain of Custody


Work Order No: \_\_\_\_\_

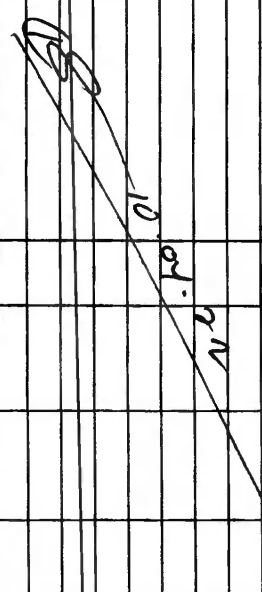
www.xenco.com Page 4 of 1

Project Manager:	Kalei Jennings	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marientfield St Suite 400	Address:	601 N Marientfield St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:		Email:	kjennings@ensolum.com

Program: USTRPST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:	<b>Work Order Comments</b> Program: USTRPST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:
--	--

Project Name:	MCA 94	Turn Around	Pres. Code
Project Number:	03D2057010	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:	Comer Shore	Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:			
<b>SAMPLE RECEIPT</b>	Temp Blank: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples Received Inact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID:	TW-907
Cooler Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:	-0.8
Sample Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading:	1.8
Total Containers:		Corrected Temperature:	1.0

Parameters		ANALYSIS REQUEST	
CHLORIDES (EPA: 300.0)	X		
TPH (8015)	X		
BTEX (8021)	X		
 890-3146 Chain of Custody			
Preservative Codes	None: NO	DI Water: H <sub>2</sub> O	
	Cool: Cool	MeOH: Me	
	HCL: HC	HNO <sub>3</sub> : HN	
	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	NaOH: Na	
	H <sub>3</sub> PO <sub>4</sub> : HP		
	NaHSO <sub>4</sub> : NABIS		
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NASO <sub>3</sub>		
	Zn Acetate+NaOH: Zn		
	NaOH+Ascorbic Acid: SAPC		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab Comp	# of Cont												
PH05	S	10.04.22	1400	3'	G	2	X	X	X									
																		

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$65.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

Revised Date: 08/25/2020 Rev 2020.2

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3146-1

SDG Number: 03D2057010

**Login Number: 3146**

**List Number: 1**

**Creator: Stutzman, Amanda**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3146-1  
SDG Number: 03D2057010

**Login Number: 3146**  
**List Number: 2**  
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**  
**List Creation: 10/06/22 10:20 AM**

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

## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3174-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



---

Authorized for release by:  
10/17/2022 12:59:53 PM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.





# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	9
QC Sample Results . . . . .	10
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	16
Certification Summary . . . . .	18
Method Summary . . . . .	19
Sample Summary . . . . .	20
Chain of Custody . . . . .	21
Receipt Checklists . . . . .	22

# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

## Qualifiers

### GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

---

**Job ID: 890-3174-1**

---

**Laboratory: Eurofins Carlsbad**

---

**Narrative**

**Job Narrative  
890-3174-1**

**Receipt**

The samples were received on 10/6/2022 3:11 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C

**Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: PH06 (890-3174-1), PH06 (890-3174-2), PH06 (890-3174-3) and PH06 (890-3174-4).

**GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-36884 and analytical batch 880-37019 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**GC Semi VOA**

Method 8015MOD\_NM: The method blank for preparation batch 880-36499 and analytical batch 880-36494 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

**HPLC/IC**

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

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

**Client Sample ID: PH06**  
**Date Collected: 10/06/22 09:05**  
**Date Received: 10/06/22 15:11**  
**Sample Depth: 1**

**Lab Sample ID: 890-3174-1**  
**Matrix: Solid**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U F2 F1	0.00201	mg/Kg		10/13/22 13:49	10/16/22 11:42	1
Toluene	<0.00201	U F2 F1	0.00201	mg/Kg		10/13/22 13:49	10/16/22 11:42	1
Ethylbenzene	<0.00201	U F2 F1	0.00201	mg/Kg		10/13/22 13:49	10/16/22 11:42	1
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.00402	mg/Kg		10/13/22 13:49	10/16/22 11:42	1
o-Xylene	<0.00201	U F2 F1	0.00201	mg/Kg		10/13/22 13:49	10/16/22 11:42	1
Xylenes, Total	<0.00402	U F2 F1	0.00402	mg/Kg		10/13/22 13:49	10/16/22 11:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	10/13/22 13:49	10/16/22 11:42	1
1,4-Difluorobenzene (Surr)	106		70 - 130	10/13/22 13:49	10/16/22 11:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			10/17/22 10:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			10/11/22 10:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 18:50	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 18:50	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 18:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130	10/10/22 07:38	10/10/22 18:50	1
o-Terphenyl	95		70 - 130	10/10/22 07:38	10/10/22 18:50	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.3		4.95	mg/Kg			10/12/22 15:52	1

**Client Sample ID: PH06**  
**Date Collected: 10/06/22 09:10**  
**Date Received: 10/06/22 15:11**  
**Sample Depth: 5**

**Lab Sample ID: 890-3174-2**  
**Matrix: Solid**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 12:02	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 12:02	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 12:02	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		10/13/22 13:49	10/16/22 12:02	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 12:02	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		10/13/22 13:49	10/16/22 12:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	10/13/22 13:49	10/16/22 12:02	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

**Client Sample ID: PH06**  
Date Collected: 10/06/22 09:10  
Date Received: 10/06/22 15:11  
Sample Depth: 5

**Lab Sample ID: 890-3174-2**  
Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	104		70 - 130	10/13/22 13:49	10/16/22 12:02	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/17/22 10:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			10/11/22 10:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 19:11	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 19:11	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 19:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	10/10/22 07:38	10/10/22 19:11	1
o-Terphenyl	110		70 - 130	10/10/22 07:38	10/10/22 19:11	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	142		5.05	mg/Kg			10/12/22 16:07	1

**Client Sample ID: PH06**  
Date Collected: 10/06/22 09:15  
Date Received: 10/06/22 15:11  
Sample Depth: 9

**Lab Sample ID: 890-3174-3**  
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:23	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:23	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:23	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/13/22 13:49	10/16/22 12:23	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:23	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/13/22 13:49	10/16/22 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	10/13/22 13:49	10/16/22 12:23	1
1,4-Difluorobenzene (Surr)	100		70 - 130	10/13/22 13:49	10/16/22 12:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/17/22 10:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/11/22 10:34	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

**Client Sample ID: PH06**  
**Date Collected: 10/06/22 09:15**  
**Date Received: 10/06/22 15:11**  
**Sample Depth: 9**

**Lab Sample ID: 890-3174-3**  
**Matrix: Solid**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/10/22 07:38	10/10/22 19:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/10/22 07:38	10/10/22 19:32	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/10/22 07:38	10/10/22 19:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130			10/10/22 07:38	10/10/22 19:32	1
o-Terphenyl	112		70 - 130			10/10/22 07:38	10/10/22 19:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	50.9		4.97	mg/Kg			10/12/22 16:12	1

**Client Sample ID: PH06**  
**Date Collected: 10/06/22 09:20**  
**Date Received: 10/06/22 15:11**  
**Sample Depth: 12**

**Lab Sample ID: 890-3174-4**  
**Matrix: Solid**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:43	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:43	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:43	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/13/22 13:49	10/16/22 12:43	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:49	10/16/22 12:43	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/13/22 13:49	10/16/22 12:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130			10/13/22 13:49	10/16/22 12:43	1
1,4-Difluorobenzene (Surr)	100		70 - 130			10/13/22 13:49	10/16/22 12:43	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/17/22 10:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/11/22 10:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/10/22 07:38	10/10/22 19:53	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/10/22 07:38	10/10/22 19:53	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/10/22 07:38	10/10/22 19:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130			10/10/22 07:38	10/10/22 19:53	1
o-Terphenyl	96		70 - 130			10/10/22 07:38	10/10/22 19:53	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

**Client Sample ID: PH06**

**Date Collected: 10/06/22 09:20**

**Date Received: 10/06/22 15:11**

**Sample Depth: 12**

**Lab Sample ID: 890-3174-4**

**Matrix: Solid**

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.2		4.98	mg/Kg			10/12/22 16:17	1

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

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1	DFBZ1
		(70-130)	(70-130)
890-3174-1	PH06	94	106
890-3174-1 MS	PH06	102	99
890-3174-1 MSD	PH06	97	102
890-3174-2	PH06	93	104
890-3174-3	PH06	93	100
890-3174-4	PH06	101	100
LCS 880-36884/1-A	Lab Control Sample	95	108
LCSD 880-36884/2-A	Lab Control Sample Dup	91	105
MB 880-36884/5-A	Method Blank	89	111
MB 880-36974/5-A	Method Blank	94	108

#### Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO1	OTPH1
		(70-130)	(70-130)
890-3174-1	PH06	86	95
890-3174-2	PH06	102	110
890-3174-3	PH06	103	112
890-3174-4	PH06	87	96
890-3175-A-1-C MS	Matrix Spike	88	88
890-3175-A-1-D MSD	Matrix Spike Duplicate	105	104
LCS 880-36499/2-A	Lab Control Sample	95	104
LCSD 880-36499/3-A	Lab Control Sample Dup	104	114
MB 880-36499/1-A	Method Blank	94	103

#### Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl



# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36884/5-A**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36884**

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 11:13	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 11:13	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 11:13	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/13/22 13:49	10/16/22 11:13	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:49	10/16/22 11:13	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/13/22 13:49	10/16/22 11:13	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	89		70 - 130	10/13/22 13:49	10/16/22 11:13	1
1,4-Difluorobenzene (Surr)	111		70 - 130	10/13/22 13:49	10/16/22 11:13	1

**Lab Sample ID: LCS 880-36884/1-A**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36884**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.1031		mg/Kg		103	70 - 130
Toluene	0.100	0.09984		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.08607		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	0.200	0.1715		mg/Kg		86	70 - 130
o-Xylene	0.100	0.08524		mg/Kg		85	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

**Lab Sample ID: LCSD 880-36884/2-A**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36884**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	0.100	0.08812		mg/Kg		88	70 - 130	16	35
Toluene	0.100	0.08699		mg/Kg		87	70 - 130	14	35
Ethylbenzene	0.100	0.07410		mg/Kg		74	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1486		mg/Kg		74	70 - 130	14	35
o-Xylene	0.100	0.07442		mg/Kg		74	70 - 130	14	35

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

**Lab Sample ID: 890-3174-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: PH06**  
**Prep Type: Total/NA**  
**Prep Batch: 36884**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.00201	U F2 F1	0.100	0.04440	F1	mg/Kg		44	70 - 130
Toluene	<0.00201	U F2 F1	0.100	0.05500	F1	mg/Kg		55	70 - 130

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

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

**Lab Sample ID: 890-3174-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: PH06**  
**Prep Type: Total/NA**  
**Prep Batch: 36884**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00201	U F2 F1	0.100	0.05117	F1	mg/Kg		51	70 - 130
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.201	0.1031	F1	mg/Kg		51	70 - 130
o-Xylene	<0.00201	U F2 F1	0.100	0.05409	F1	mg/Kg		54	70 - 130

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

**Lab Sample ID: 890-3174-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: PH06**  
**Prep Type: Total/NA**  
**Prep Batch: 36884**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Benzene	<0.00201	U F2 F1	0.0996	0.09045	F2	mg/Kg		91	70 - 130	68	35
Toluene	<0.00201	U F2 F1	0.0996	0.09442	F2	mg/Kg		95	70 - 130	53	35
Ethylbenzene	<0.00201	U F2 F1	0.0996	0.08216	F2	mg/Kg		82	70 - 130	46	35
m-Xylene & p-Xylene	<0.00402	U F2 F1	0.199	0.1661	F2	mg/Kg		83	70 - 130	47	35
o-Xylene	<0.00201	U F2 F1	0.0996	0.08174	F2	mg/Kg		82	70 - 130	41	35

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

**Lab Sample ID: MB 880-36974/5-A**  
**Matrix: Solid**  
**Analysis Batch: 37019**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36974**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/14/22 13:40	10/15/22 23:39	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/14/22 13:40	10/15/22 23:39	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/14/22 13:40	10/15/22 23:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/14/22 13:40	10/15/22 23:39	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/14/22 13:40	10/15/22 23:39	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/14/22 13:40	10/15/22 23:39	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	94		70 - 130	10/14/22 13:40	10/15/22 23:39	1
1,4-Difluorobenzene (Surr)	108		70 - 130	10/14/22 13:40	10/15/22 23:39	1

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

**Lab Sample ID: MB 880-36499/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 11:01	1

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36499/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 11:01	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 11:01	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	94		70 - 130	10/10/22 07:38	10/10/22 11:01	1
o-Terphenyl	103		70 - 130	10/10/22 07:38	10/10/22 11:01	1

**Lab Sample ID: LCS 880-36499/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Gasoline Range Organics (GRO)-C6-C10	1000	867.7		mg/Kg		87	70 - 130
Diesel Range Organics (Over C10-C28)	1000	909.1		mg/Kg		91	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	95		70 - 130
o-Terphenyl	104		70 - 130

**Lab Sample ID: LCSD 880-36499/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	919.2		mg/Kg		92	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	1000	966.8		mg/Kg		97	70 - 130	6	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
1-Chlorooctane	104		70 - 130
o-Terphenyl	114		70 - 130

**Lab Sample ID: 890-3175-A-1-C MS**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1-Chlorooctane	88		70 - 130
o-Terphenyl	88		70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

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

Lab Sample ID: 890-3175-A-1-D MSD  
Matrix: Solid  
Analysis Batch: 36494

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 36499

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	104		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-36520/1-A  
Matrix: Solid  
Analysis Batch: 36820

Client Sample ID: Method Blank  
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/12/22 15:38	1

Lab Sample ID: LCS 880-36520/2-A  
Matrix: Solid  
Analysis Batch: 36820

Client Sample ID: Lab Control Sample  
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	256.7		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-36520/3-A  
Matrix: Solid  
Analysis Batch: 36820

Client Sample ID: Lab Control Sample Dup  
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	257.3		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-3174-1 MS  
Matrix: Solid  
Analysis Batch: 36820

Client Sample ID: PH06  
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	38.3		248	287.9		mg/Kg		101	90 - 110

Lab Sample ID: 890-3174-1 MSD  
Matrix: Solid  
Analysis Batch: 36820

Client Sample ID: PH06  
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	38.3		248	288.7		mg/Kg		101	90 - 110	0	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Total/NA	Solid	5035	
890-3174-2	PH06	Total/NA	Solid	5035	
890-3174-3	PH06	Total/NA	Solid	5035	
890-3174-4	PH06	Total/NA	Solid	5035	
MB 880-36884/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36884/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36884/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3174-1 MS	PH06	Total/NA	Solid	5035	
890-3174-1 MSD	PH06	Total/NA	Solid	5035	

### Prep Batch: 36974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36974/5-A	Method Blank	Total/NA	Solid	5035	

### Analysis Batch: 37019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Total/NA	Solid	8021B	36884
890-3174-2	PH06	Total/NA	Solid	8021B	36884
890-3174-3	PH06	Total/NA	Solid	8021B	36884
890-3174-4	PH06	Total/NA	Solid	8021B	36884
MB 880-36884/5-A	Method Blank	Total/NA	Solid	8021B	36884
MB 880-36974/5-A	Method Blank	Total/NA	Solid	8021B	36974
LCS 880-36884/1-A	Lab Control Sample	Total/NA	Solid	8021B	36884
LCSD 880-36884/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36884
890-3174-1 MS	PH06	Total/NA	Solid	8021B	36884
890-3174-1 MSD	PH06	Total/NA	Solid	8021B	36884

### Analysis Batch: 37134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Total/NA	Solid	Total BTEX	
890-3174-2	PH06	Total/NA	Solid	Total BTEX	
890-3174-3	PH06	Total/NA	Solid	Total BTEX	
890-3174-4	PH06	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Analysis Batch: 36494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Total/NA	Solid	8015B NM	36499
890-3174-2	PH06	Total/NA	Solid	8015B NM	36499
890-3174-3	PH06	Total/NA	Solid	8015B NM	36499
890-3174-4	PH06	Total/NA	Solid	8015B NM	36499
MB 880-36499/1-A	Method Blank	Total/NA	Solid	8015B NM	36499
LCS 880-36499/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36499
LCSD 880-36499/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36499
890-3175-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	36499
890-3175-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36499

### Prep Batch: 36499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

## GC Semi VOA (Continued)

### Prep Batch: 36499 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-2	PH06	Total/NA	Solid	8015NM Prep	
890-3174-3	PH06	Total/NA	Solid	8015NM Prep	
890-3174-4	PH06	Total/NA	Solid	8015NM Prep	
MB 880-36499/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36499/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36499/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3175-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3175-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 36667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Total/NA	Solid	8015 NM	
890-3174-2	PH06	Total/NA	Solid	8015 NM	
890-3174-3	PH06	Total/NA	Solid	8015 NM	
890-3174-4	PH06	Total/NA	Solid	8015 NM	

## HPLC/IC

### Leach Batch: 36520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Soluble	Solid	DI Leach	
890-3174-2	PH06	Soluble	Solid	DI Leach	
890-3174-3	PH06	Soluble	Solid	DI Leach	
890-3174-4	PH06	Soluble	Solid	DI Leach	
MB 880-36520/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36520/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36520/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3174-1 MS	PH06	Soluble	Solid	DI Leach	
890-3174-1 MSD	PH06	Soluble	Solid	DI Leach	

### Analysis Batch: 36820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3174-1	PH06	Soluble	Solid	300.0	36520
890-3174-2	PH06	Soluble	Solid	300.0	36520
890-3174-3	PH06	Soluble	Solid	300.0	36520
890-3174-4	PH06	Soluble	Solid	300.0	36520
MB 880-36520/1-A	Method Blank	Soluble	Solid	300.0	36520
LCS 880-36520/2-A	Lab Control Sample	Soluble	Solid	300.0	36520
LCSD 880-36520/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36520
890-3174-1 MS	PH06	Soluble	Solid	300.0	36520
890-3174-1 MSD	PH06	Soluble	Solid	300.0	36520

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

**Client Sample ID: PH06**

**Lab Sample ID: 890-3174-1**

**Date Collected: 10/06/22 09:05**

**Matrix: Solid**

**Date Received: 10/06/22 15:11**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	36884	10/13/22 13:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37019	10/16/22 11:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37134	10/17/22 10:58	SM	EET MID
Total/NA	Analysis	8015 NM		1			36667	10/11/22 10:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	36499	10/10/22 07:38	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36494	10/10/22 18:50	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	36520	10/10/22 10:05	CH	EET MID
Soluble	Analysis	300.0		1			36820	10/12/22 15:52	CH	EET MID

**Client Sample ID: PH06**

**Lab Sample ID: 890-3174-2**

**Date Collected: 10/06/22 09:10**

**Matrix: Solid**

**Date Received: 10/06/22 15:11**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	36884	10/13/22 13:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37019	10/16/22 12:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37134	10/17/22 10:58	SM	EET MID
Total/NA	Analysis	8015 NM		1			36667	10/11/22 10:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	36499	10/10/22 07:38	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36494	10/10/22 19:11	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	36520	10/10/22 10:05	CH	EET MID
Soluble	Analysis	300.0		1			36820	10/12/22 16:07	CH	EET MID

**Client Sample ID: PH06**

**Lab Sample ID: 890-3174-3**

**Date Collected: 10/06/22 09:15**

**Matrix: Solid**

**Date Received: 10/06/22 15:11**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	36884	10/13/22 13:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37019	10/16/22 12:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37134	10/17/22 10:58	SM	EET MID
Total/NA	Analysis	8015 NM		1			36667	10/11/22 10:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	36499	10/10/22 07:38	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36494	10/10/22 19:32	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36520	10/10/22 10:05	CH	EET MID
Soluble	Analysis	300.0		1			36820	10/12/22 16:12	CH	EET MID

**Client Sample ID: PH06**

**Lab Sample ID: 890-3174-4**

**Date Collected: 10/06/22 09:20**

**Matrix: Solid**

**Date Received: 10/06/22 15:11**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	36884	10/13/22 13:49	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37019	10/16/22 12:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37134	10/17/22 10:58	SM	EET MID

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

**Client Sample ID: PH06**

**Date Collected: 10/06/22 09:20**

**Date Received: 10/06/22 15:11**

**Lab Sample ID: 890-3174-4**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			36667	10/11/22 10:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	36499	10/10/22 07:38	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36494	10/10/22 19:53	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	36520	10/10/22 10:05	CH	EET MID
Soluble	Analysis	300.0		1			36820	10/12/22 16:17	CH	EET MID

**Laboratory References:**

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

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



# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3174-1  
SDG: 03D2057010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3174-1	PH06	Solid	10/06/22 09:05	10/06/22 15:11	1
890-3174-2	PH06	Solid	10/06/22 09:10	10/06/22 15:11	5
890-3174-3	PH06	Solid	10/06/22 09:15	10/06/22 15:11	9
890-3174-4	PH06	Solid	10/06/22 09:20	10/06/22 15:11	12

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



Environment Testing  
Xenco

Chain of Custody

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

Work Order No: \_\_\_\_\_

www.xenco.com Page 2 of 1

Project Manager:	Katei Jennings	Bill to: (if different)	Katei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marientfield St Suite 400	Address:	601 N Marientfield St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:		Email:	kjennings@ensolum.com

Program: <input type="checkbox"/> UST/PRP <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: _____ Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____	
Work Order Comments _____ _____	

Project Name:	MCA 94	Turn Around	Pres. Code	ANALYSIS REQUEST	Preservative Codes
Project Number:	03D2057010	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush			None: NO DI Water: H <sub>2</sub> O Cool: Cool MeOH: Me HCL: HC HNO <sub>3</sub> : HN H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na H <sub>3</sub> PO <sub>4</sub> : HP NAHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NASO <sub>3</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: S APC
Project Location:	Comner Shore	Due Date:			
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm			
PO #:		Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

SAMPLE RECEIPT Samples Received Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Thermometer ID: 11111111 Cooler Custody Seals: Yes No N/A Correction Factor: -0.2 Sample Custody Seals: Yes No N/A Temperature Reading: 4.8 Total Containers: Corrected Temperature: 4.6	
Parameters CHLORIDES (EPA: 300.0) TPH (8015) BTEX (8021)	



Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
PH06	S	10.06.22	905	1'	G	1	X	X	X	
PH06	S	10.06.22	910	5'	G	1	X	X	X	
PH06	S	10.06.22	915	9'	G	1	X	X	X	
PH06	S	10.06.22	920	12'	G	1	X	X	X	
Incident Number NAPP2212531906										

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		10.6.22 1511			

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3174-1  
SDG Number: 03D2057010

**Login Number: 3174**  
**List Number: 1**  
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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



# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3174-1  
SDG Number: 03D2057010

**Login Number: 3174**  
**List Number: 2**  
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**  
**List Creation: 10/10/22 08:41 AM**

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

## ANALYTICAL REPORT

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

Laboratory Job ID: 890-3176-1  
Laboratory Sample Delivery Group: 03D2057010  
Client Project/Site: MCA 94

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

Attn: Kalei Jennings



Authorized for release by:  
10/17/2022 11:20:55 AM

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

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

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.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	7
QC Sample Results . . . . .	8
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	16
Certification Summary . . . . .	17
Method Summary . . . . .	18
Sample Summary . . . . .	19
Chain of Custody . . . . .	20
Receipt Checklists . . . . .	21



# Definitions/Glossary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

## Qualifiers

### GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

---

## Job ID: 890-3176-1

---

### Laboratory: Eurofins Carlsbad

#### Narrative

---

#### Job Narrative 890-3176-1

#### Receipt

The samples were received on 10/6/2022 3:11 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: PH05 (890-3176-1) and PH05 (890-3176-2).

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-36609 and analytical batch 880-36928 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.

Method 8021B: Surrogate recovery for the following sample was outside control limits: PH05 (890-3176-1). Evidence of matrix interferences is not obvious.

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

#### GC Semi VOA

Method 8015MOD\_NM: The method blank for preparation batch 880-36499 and analytical batch 880-36494 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

#### HPLC/IC

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

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

**Client Sample ID: PH05**

**Lab Sample ID: 890-3176-1**

Date Collected: 10/06/22 09:00

Matrix: Solid

Date Received: 10/06/22 15:11

Sample Depth: 10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 13:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 13:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 13:46	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/10/22 16:53	10/15/22 13:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 13:46	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/10/22 16:53	10/15/22 13:46	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	51	S1-	70 - 130			10/10/22 16:53	10/15/22 13:46	1
1,4-Difluorobenzene (Surr)	72		70 - 130			10/10/22 16:53	10/15/22 13:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/14/22 12:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			10/11/22 10:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 20:15	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 20:15	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/10/22 07:38	10/10/22 20:15	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	90		70 - 130			10/10/22 07:38	10/10/22 20:15	1
o-Terphenyl	100		70 - 130			10/10/22 07:38	10/10/22 20:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6350		49.7	mg/Kg			10/13/22 11:32	10

**Client Sample ID: PH05**

**Lab Sample ID: 890-3176-2**

Date Collected: 10/04/22 14:30

Matrix: Solid

Date Received: 10/06/22 15:11

Sample Depth: 12

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:16	10/14/22 00:41	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:16	10/14/22 00:41	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:16	10/14/22 00:41	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/13/22 13:16	10/14/22 00:41	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/13/22 13:16	10/14/22 00:41	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/13/22 13:16	10/14/22 00:41	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>			<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	100		70 - 130			10/13/22 13:16	10/14/22 00:41	1

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

**Client Sample ID: PH05**

**Lab Sample ID: 890-3176-2**

Date Collected: 10/04/22 14:30

Matrix: Solid

Date Received: 10/06/22 15:11

Sample Depth: 12

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	103		70 - 130	10/13/22 13:16	10/14/22 00:41	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/14/22 12:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/11/22 10:34	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 20:36	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 20:36	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130	10/10/22 07:38	10/10/22 20:36	1
o-Terphenyl	113		70 - 130	10/10/22 07:38	10/10/22 20:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7310		49.7	mg/Kg			10/13/22 11:37	10

# Surrogate Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-3150-A-23-C MS	Matrix Spike	120	90
890-3150-A-23-D MSD	Matrix Spike Duplicate	98	87
890-3176-1	PH05	51 S1-	72
890-3176-2	PH05	100	103
890-3176-2 MS	PH05	107	107
890-3176-2 MSD	PH05	105	103
LCS 880-36609/1-A	Lab Control Sample	89	84
LCS 880-36882/1-A	Lab Control Sample	105	102
LCSD 880-36609/2-A	Lab Control Sample Dup	96	93
LCSD 880-36882/2-A	Lab Control Sample Dup	100	98
MB 880-36609/5-A	Method Blank	100	80
MB 880-36684/5-A	Method Blank	103	84
MB 880-36731/5-A	Method Blank	88	108
MB 880-36882/5-A	Method Blank	88	114
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-3175-A-1-C MS	Matrix Spike	88	88
890-3175-A-1-D MSD	Matrix Spike Duplicate	105	104
890-3176-1	PH05	90	100
890-3176-2	PH05	102	113
LCS 880-36499/2-A	Lab Control Sample	95	104
LCSD 880-36499/3-A	Lab Control Sample Dup	104	114
MB 880-36499/1-A	Method Blank	94	103
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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

**Lab Sample ID: MB 880-36609/5-A**  
**Matrix: Solid**  
**Analysis Batch: 36928**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 36609**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 08:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 08:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 08:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/10/22 16:53	10/15/22 08:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/10/22 16:53	10/15/22 08:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/10/22 16:53	10/15/22 08:53	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	100		70 - 130	10/10/22 16:53	10/15/22 08:53	1
1,4-Difluorobenzene (Surr)	80		70 - 130	10/10/22 16:53	10/15/22 08:53	1

**Lab Sample ID: LCS 880-36609/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36928**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36609**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.09563		mg/Kg		96	70 - 130
Toluene	0.100	0.09823		mg/Kg		98	70 - 130
Ethylbenzene	0.100	0.09267		mg/Kg		93	70 - 130
m-Xylene & p-Xylene	0.200	0.1924		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09704		mg/Kg		97	70 - 130

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	89		70 - 130
1,4-Difluorobenzene (Surr)	84		70 - 130

**Lab Sample ID: LCSD 880-36609/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36928**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36609**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	0.100	0.09888		mg/Kg		99	70 - 130	3	35
Toluene	0.100	0.1027		mg/Kg		103	70 - 130	4	35
Ethylbenzene	0.100	0.09791		mg/Kg		98	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2013		mg/Kg		101	70 - 130	4	35
o-Xylene	0.100	0.1024		mg/Kg		102	70 - 130	5	35

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

**Lab Sample ID: 890-3150-A-23-C MS**  
**Matrix: Solid**  
**Analysis Batch: 36928**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36609**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00200	U F1 F2	0.100	0.04224	F1	mg/Kg		42	70 - 130
Toluene	<0.00200	U F1 F2	0.100	0.05595	F1	mg/Kg		56	70 - 130

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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

**Lab Sample ID: 890-3150-A-23-C MS**

**Matrix: Solid**

**Analysis Batch: 36928**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 36609**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
Ethylbenzene	<0.00200	U F1	0.100	0.06608	F1	mg/Kg		66	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1334	F1	mg/Kg		67	70 - 130
o-Xylene	<0.00200	U	0.100	0.07676		mg/Kg		77	70 - 130
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	120		70 - 130						
1,4-Difluorobenzene (Surr)	90		70 - 130						

**Lab Sample ID: 890-3150-A-23-D MSD**

**Matrix: Solid**

**Analysis Batch: 36928**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 36609**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	
	Result	Qualifier		Result	Qualifier						Limits
Benzene	<0.00200	U F1 F2	0.0990	0.08809	F2	mg/Kg		89	70 - 130	70	35
Toluene	<0.00200	U F1 F2	0.0990	0.09250	F2	mg/Kg		93	70 - 130	49	35
Ethylbenzene	<0.00200	U F1	0.0990	0.08628		mg/Kg		87	70 - 130	27	35
m-Xylene & p-Xylene	<0.00399	U F1	0.198	0.1727		mg/Kg		87	70 - 130	26	35
o-Xylene	<0.00200	U	0.0990	0.09104		mg/Kg		92	70 - 130	17	35
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	98		70 - 130								
1,4-Difluorobenzene (Surr)	87		70 - 130								

**Lab Sample ID: MB 880-36684/5-A**

**Matrix: Solid**

**Analysis Batch: 36928**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 36684**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:22	10/14/22 22:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:22	10/14/22 22:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:22	10/14/22 22:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/11/22 14:22	10/14/22 22:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/11/22 14:22	10/14/22 22:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/11/22 14:22	10/14/22 22:12	1
<b>MB MB</b>								
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
4-Bromofluorobenzene (Surr)	103		70 - 130	10/11/22 14:22	10/14/22 22:12	1		
1,4-Difluorobenzene (Surr)	84		70 - 130	10/11/22 14:22	10/14/22 22:12	1		

**Lab Sample ID: MB 880-36731/5-A**

**Matrix: Solid**

**Analysis Batch: 36813**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 36731**

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/12/22 10:00	10/13/22 11:21	1

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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

Lab Sample ID: MB 880-36731/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36813

Prep Batch: 36731

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/12/22 10:00	10/13/22 11:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130			10/12/22 10:00	10/13/22 11:21	1
1,4-Difluorobenzene (Surr)	108		70 - 130			10/12/22 10:00	10/13/22 11:21	1

Lab Sample ID: MB 880-36882/5-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36813

Prep Batch: 36882

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Benzene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:16	10/14/22 00:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:16	10/14/22 00:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:16	10/14/22 00:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/13/22 13:16	10/14/22 00:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/13/22 13:16	10/14/22 00:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/13/22 13:16	10/14/22 00:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130			10/13/22 13:16	10/14/22 00:12	1
1,4-Difluorobenzene (Surr)	114		70 - 130			10/13/22 13:16	10/14/22 00:12	1

Lab Sample ID: LCS 880-36882/1-A

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36813

Prep Batch: 36882

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	0.100	0.09905		mg/Kg		99	70 - 130
Toluene	0.100	0.1048		mg/Kg		105	70 - 130
Ethylbenzene	0.100	0.09399		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1893		mg/Kg		95	70 - 130
o-Xylene	0.100	0.09263		mg/Kg		93	70 - 130
Surrogate	%Recovery		Qualifier			Limits	
4-Bromofluorobenzene (Surr)	105					70 - 130	
1,4-Difluorobenzene (Surr)	102					70 - 130	

Lab Sample ID: LCSD 880-36882/2-A

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 36813

Prep Batch: 36882

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	
		Result	Qualifier					RPD	Limit
Benzene	0.100	0.09547		mg/Kg		95	70 - 130	4	35
Toluene	0.100	0.1023		mg/Kg		102	70 - 130	2	35
Ethylbenzene	0.100	0.09025		mg/Kg		90	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.1844		mg/Kg		92	70 - 130	3	35
o-Xylene	0.100	0.09137		mg/Kg		91	70 - 130	1	35

Eurofins Carlsbad



# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-3176-2 MS  
Matrix: Solid  
Analysis Batch: 36813

Client Sample ID: PH05  
Prep Type: Total/NA  
Prep Batch: 36882

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Benzene	<0.00199	U	0.0998	0.08802		mg/Kg		88		70 - 130
Toluene	<0.00199	U	0.0998	0.09314		mg/Kg		93		70 - 130
Ethylbenzene	<0.00199	U	0.0998	0.08368		mg/Kg		84		70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1692		mg/Kg		85		70 - 130
o-Xylene	<0.00199	U	0.0998	0.08385		mg/Kg		84		70 - 130

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

Lab Sample ID: 890-3176-2 MSD  
Matrix: Solid  
Analysis Batch: 36813

Client Sample ID: PH05  
Prep Type: Total/NA  
Prep Batch: 36882

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						RPD	Limit
Benzene	<0.00199	U	0.100	0.08044		mg/Kg		80		70 - 130	9	35
Toluene	<0.00199	U	0.100	0.08412		mg/Kg		84		70 - 130	10	35
Ethylbenzene	<0.00199	U	0.100	0.07598		mg/Kg		76		70 - 130	10	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1542		mg/Kg		77		70 - 130	9	35
o-Xylene	<0.00199	U	0.100	0.07544		mg/Kg		75		70 - 130	11	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

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

Lab Sample ID: MB 880-36499/1-A  
Matrix: Solid  
Analysis Batch: 36494

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 36499

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 11:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 11:01	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/10/22 07:38	10/10/22 11:01	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1-Chlorooctane	94		70 - 130	10/10/22 07:38	10/10/22 11:01	1
o-Terphenyl	103		70 - 130	10/10/22 07:38	10/10/22 11:01	1

Eurofins Carlsbad

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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

**Lab Sample ID: LCS 880-36499/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
							Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	867.7		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	909.1		mg/Kg		91	70 - 130		
		<b>LCS</b>	<b>LCS</b>						
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1-Chlorooctane	95		70 - 130						
o-Terphenyl	104		70 - 130						

**Lab Sample ID: LCSD 880-36499/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
							Limits		RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	919.2		mg/Kg		92	70 - 130		6	20
Diesel Range Organics (Over C10-C28)	1000	966.8		mg/Kg		97	70 - 130		6	20
		<b>LCSD</b>	<b>LCSD</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
1-Chlorooctane	104		70 - 130							
o-Terphenyl	114		70 - 130							

**Lab Sample ID: 890-3175-A-1-C MS**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Surrogate	%Recovery	MS Qualifier	MS Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	88		70 - 130

**Lab Sample ID: 890-3175-A-1-D MSD**  
**Matrix: Solid**  
**Analysis Batch: 36494**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 36499**

Surrogate	%Recovery	MSD Qualifier	MSD Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	104		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-36520/1-A**  
**Matrix: Solid**  
**Analysis Batch: 36820**

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

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			10/12/22 15:38	1

# QC Sample Results

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 880-36520/2-A**  
**Matrix: Solid**  
**Analysis Batch: 36820**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Soluble**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	256.7		mg/Kg		103	90 - 110

**Lab Sample ID: LCSD 880-36520/3-A**  
**Matrix: Solid**  
**Analysis Batch: 36820**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Soluble**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	257.3		mg/Kg		103	90 - 110	0	20

**Lab Sample ID: 890-3175-A-7-B MS**  
**Matrix: Solid**  
**Analysis Batch: 36820**

**Client Sample ID: Matrix Spike**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	261		248	515.1		mg/Kg		103	90 - 110

**Lab Sample ID: 890-3175-A-7-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 36820**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	261		248	516.5		mg/Kg		103	90 - 110	0	20

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

## GC VOA

### Prep Batch: 36609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Total/NA	Solid	5035	
MB 880-36609/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36609/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36609/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3150-A-23-C MS	Matrix Spike	Total/NA	Solid	5035	
890-3150-A-23-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Prep Batch: 36684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36684/5-A	Method Blank	Total/NA	Solid	5035	

### Prep Batch: 36731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-36731/5-A	Method Blank	Total/NA	Solid	5035	

### Analysis Batch: 36813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-2	PH05	Total/NA	Solid	8021B	36882
MB 880-36731/5-A	Method Blank	Total/NA	Solid	8021B	36731
MB 880-36882/5-A	Method Blank	Total/NA	Solid	8021B	36882
LCS 880-36882/1-A	Lab Control Sample	Total/NA	Solid	8021B	36882
LCSD 880-36882/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36882
890-3176-2 MS	PH05	Total/NA	Solid	8021B	36882
890-3176-2 MSD	PH05	Total/NA	Solid	8021B	36882

### Prep Batch: 36882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-2	PH05	Total/NA	Solid	5035	
MB 880-36882/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-36882/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-36882/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3176-2 MS	PH05	Total/NA	Solid	5035	
890-3176-2 MSD	PH05	Total/NA	Solid	5035	

### Analysis Batch: 36928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Total/NA	Solid	8021B	36609
MB 880-36609/5-A	Method Blank	Total/NA	Solid	8021B	36609
MB 880-36684/5-A	Method Blank	Total/NA	Solid	8021B	36684
LCS 880-36609/1-A	Lab Control Sample	Total/NA	Solid	8021B	36609
LCSD 880-36609/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	36609
890-3150-A-23-C MS	Matrix Spike	Total/NA	Solid	8021B	36609
890-3150-A-23-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	36609

### Analysis Batch: 36967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Total/NA	Solid	Total BTEX	
890-3176-2	PH05	Total/NA	Solid	Total BTEX	

# QC Association Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

## GC Semi VOA

### Analysis Batch: 36494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Total/NA	Solid	8015B NM	36499
890-3176-2	PH05	Total/NA	Solid	8015B NM	36499
MB 880-36499/1-A	Method Blank	Total/NA	Solid	8015B NM	36499
LCS 880-36499/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	36499
LCSD 880-36499/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	36499
890-3175-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	36499
890-3175-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	36499

### Prep Batch: 36499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Total/NA	Solid	8015NM Prep	
890-3176-2	PH05	Total/NA	Solid	8015NM Prep	
MB 880-36499/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-36499/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-36499/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3175-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3175-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 36668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Total/NA	Solid	8015 NM	
890-3176-2	PH05	Total/NA	Solid	8015 NM	

## HPLC/IC

### Leach Batch: 36520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Soluble	Solid	DI Leach	
890-3176-2	PH05	Soluble	Solid	DI Leach	
MB 880-36520/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-36520/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-36520/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3175-A-7-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3175-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 36820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3176-1	PH05	Soluble	Solid	300.0	36520
890-3176-2	PH05	Soluble	Solid	300.0	36520
MB 880-36520/1-A	Method Blank	Soluble	Solid	300.0	36520
LCS 880-36520/2-A	Lab Control Sample	Soluble	Solid	300.0	36520
LCSD 880-36520/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	36520
890-3175-A-7-B MS	Matrix Spike	Soluble	Solid	300.0	36520
890-3175-A-7-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	36520

# Lab Chronicle

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

**Client Sample ID: PH05**

**Lab Sample ID: 890-3176-1**

**Date Collected: 10/06/22 09:00**

**Matrix: Solid**

**Date Received: 10/06/22 15:11**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	36609	10/10/22 16:53	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36928	10/15/22 13:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36967	10/14/22 12:21	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36668	10/11/22 10:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	36499	10/10/22 07:38	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36494	10/10/22 20:15	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36520	10/10/22 10:05	CH	EET MID
Soluble	Analysis	300.0		10			36820	10/13/22 11:32	CH	EET MID

**Client Sample ID: PH05**

**Lab Sample ID: 890-3176-2**

**Date Collected: 10/04/22 14:30**

**Matrix: Solid**

**Date Received: 10/06/22 15:11**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	36882	10/13/22 13:16	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	36813	10/14/22 00:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			36967	10/14/22 12:21	AJ	EET MID
Total/NA	Analysis	8015 NM		1			36668	10/11/22 10:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	36499	10/10/22 07:38	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	36494	10/10/22 20:36	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	36520	10/10/22 10:05	CH	EET MID
Soluble	Analysis	300.0		10			36820	10/13/22 11:37	CH	EET MID

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

## Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-24	06-30-23

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

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

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

# Method Summary

Client: Ensolum  
Project/Site: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

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: MCA 94

Job ID: 890-3176-1  
SDG: 03D2057010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3176-1	PH05	Solid	10/06/22 09:00	10/06/22 15:11	10
890-3176-2	PH05	Solid	10/04/22 14:30	10/06/22 15:11	12

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



Environment Testing  
Xenco

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

### Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Kalei Jennings	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marientfeld St Suite 400	Address:	601 N Marientfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:		Email:	kjennings@ensolum.com

Work Order Comments	
Program: USTR/PST <input type="checkbox"/>	PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	
Reporting: Level II <input type="checkbox"/>	Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables: EDD <input type="checkbox"/>	ADAPT <input type="checkbox"/> Other: _____

Project Name:	MCA 94	<input checked="" type="checkbox"/> Turn Around	Pres. Code						
Project Number:	03D2057010	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush							
Project Location:	Conner Shore	Due Date:							
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm							
PO #:		Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
SAMPLE RECEIPT		Samples Received Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID: <u>11W007</u>						
		Cooler Custody Seals: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Correction Factor: <u>1-0.2</u>						
		Sample Custody Seals: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Temperature Reading: <u>4.8</u>						
		Total Containers:	Corrected Temperature: <u>4.6</u>						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	ANALYSIS REQUEST													
							CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)											
PH05	S	10.06.22	900	10'	G	1	X	X	X											
PH05	S	10.04.22	1430	12'	G	1	X	X	X											
<del>PH05</del>																				

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Hg: 1631 / 245.1 / 7470 / 7471	
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)
<i>[Signature]</i>	<i>[Signature]</i>	10.02.21 5:11		

## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3176-1

SDG Number: 03D2057010

**Login Number: 3176**

**List Number: 1**

**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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



## Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3176-1

SDG Number: 03D2057010

**Login Number: 3176**

**List Number: 2**

**Creator: Kramer, Jessica**

**List Source: Eurofins Midland**

**List Creation: 10/10/22 11:59 AM**

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



APPENDIX E

Final C-141

---

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	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name _____ Title: _____ Signature: <u>Patricia Espinoza</u> _____ Date: _____ email: _____ Telephone: _____
<b><u>OCD Only</u></b> Received by: <u>Jocelyn Harimon</u> Date: <u>05/05/2022</u>

Received by OCD: 5/5/2022 8:53:56 AM

Page 3 of 4

Asset Area:	Maljamar
Release Discovery Date & Time:	4/28/2022 0:00
Release Type:	Produced Water
Provide any known details about the event:	Injection line leak. 1 BBLS were recovered due to the extremely dry and sandy area.

## Spill Calculation - Subsurface Spill - Rectangle

Was the release on pad or off-pad?	See reference table below
It rained at least a half inch in the last 24 hours?	See reference table below

Length (ft.)	Width (ft.)	Depth (in.)	Soil Spilled-Fluid Saturation	Estimated volume of each area (bbl.)	Total Estimated Volume of Spill (bbl.)
125.0	6.0	6.00	15.12%	66.750	10.093
75.0	5.0	7.00	15.12%	38.938	5.887
250.0	6.0	6.00	15.12%	133.500	20.185
55.0	30.0	24.00	15.12%	587.400	88.815
				0.000	0.000
				0.000	0.000
				0.000	0.000
				0.000	0.000
				0.000	0.000
				0.000	0.000
				0.000	0.000
				Total Volume Release:	124.980

Released to Imaging: 5/5/2022 9:04:44 AM



**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 104337

**CONDITIONS**

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 104337
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
jharimon	None	5/5/2022

Incident ID	NAPP2212531906
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?	_50-100 (feet bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No


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

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

Incident ID	NAPP2212531906
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: Bryce Wagoner Title: Permian HSE Specialist II  
 Signature:  Date: 12/22/2022  
 email: Bryce.Wagoner@mavresources.com Telephone: 928-241-1862

**OCD Only**

Received by: Jocelyn Harimon Date: 12/22/2022

Incident ID	NAPP2212531906
District RP	
Facility ID	
Application ID	

## Remediation Plan


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

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

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

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.


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

Printed Name:  Bryce Wagoner  Title:  Permian HSE Specialist II   
 Signature:    Date:  12/22/2022   
 email:  Bryce.Wagoner@mavresources.com  Telephone:  928-241-1862

**OCD Only**

Received by:  Jocelyn Harimon  Date:  12/22/2022

- Approved     
  Approved with Attached Conditions of Approval     
  Denied     
  Deferral Approved

Signature:    Date:  01/20/2023