ENSOLUM

January 18, 2023

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

Re: Remediation Work Plan
MCA Unit #145
Incident Number NAPP2229469315
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Maverick Natural Resources, LLC (Maverick), has prepared the following *Remediation Work Plan* (RWP) to document Site assessment and soil sampling activities completed to date and additional remediation activities proposed at the MCA 145 (Site), resulting from a flow line release of produced water into the surrounding pasture. The following RWP proposes excavation of waste-containing soil in the top 4 feet of non-oil and gas production areas.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit H, Section 27, Township 17 South, Range 32 East, in Lea County, New Mexico (32.805570° N, 103.748544° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On October 14, 2022, corrosion on an injection line ruptured, resulting in the release of 39.16 barrels (bbls) of crude oil and 254.24 bbls of produced water into the pasture. Approximately 21.16 bbls of crude oil and 238.84 bbls of produced water were recovered. Ensolum, on behalf of Maverick, reported the incident to the New Mexico Oil Conservation Division (NMOCD) on October 15, 2022. Maverick reported the spill to the NMOCD via a Release Notification Form C-141 (Form C-141) on October 21, 2022. The release was assigned Incident Number NAPP2229469315.

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 greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to grounwater data is New Mexico Office of the State Engineer (NMOSE) well RA-12721-POD5, located approximately 5,176 feet southwest of the Site. The groundwater well has a reported depth to

groundwater of 124 feet bgs and a total depth of 130 feet bgs. Additional depth to water data, presented in the Closure Request for Incident Number NJXK1621825385 and approved by NMOCD on October 26, 2022, is utilized to confirm depth to water between 50 and 100 feet bgs. Two delineation borings, BH01 and BH04 were drilled via air rotary in March of 2020 to depths greater than 50 feet bgs, respectively. No groundwater was encountered while drilling and the borings were properly abandoned. All wells used for depth to groundwater determination are presented on Figure 1. The referenced well records are included in Appendix A.

The closest continuously flowing or significant waterocusse to the Site is a pond, located approximately 1,486 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hosptial, institution, church, or wetland. The stie is greater than 1,000 feet to a freshwater well or spring and is not within a 100-years floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

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

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

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

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between October 21 and 31, 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 18 feet bgs. Discrete delineation soil samples were collected from each pothole at depths ranging from 1-foot to 18 feet bgs. The delineation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The release extent and delineation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included in Appendix B. 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 placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0. Soil

samples delivered to the laboratory the same day they are collected may not have equilibrated to 6 degrees Celcius required for shipment and long term storage, but are considered to have been received in acceptable condition.

Laboratory analytical results for delineation soil samples PH01 through PH04 and PH06 indicated waste-containing soil not meeting the reclamation requirement is present within the top 4 feet of soil off pad. Delineation soil sample PH05, advanced outside the release extent, indicated COC concentrations were compliant with the Site Closure Criteria and reclamation requirement. 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

Waste-containing soil has been detected in the top 4 feet of soil off pad as indicated by delineation soil samples PH01 through PH04 and PH06 to a total depth of 4 feet bgs. As a result, Maverick proposes excavation of waste-containing soil in the top 4 feet.

Maverick requests approval to complete the following remediation activities:

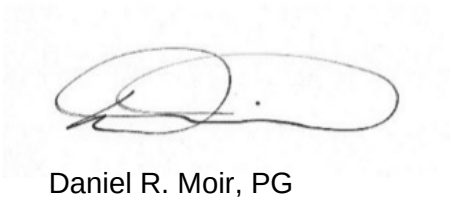
- Excavation of waste-containing soil, specifically soil containing concentrations of chloride in excess of 600 mg/kg, in the top 4 feet of soil in areas of non-oil and gas production facilities. Excavation will proceed laterally until sidewall samples indicated chloride concentrations are compliant with the reclamation requirements. Confirmation samples will be collected from the sidewalls of the final excavation extent.
- 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. analyzed for BTEX, TPH, and chloride.
- Upon completion of excavation activities, if the final depth of the excavation is shallower than 4 feet bgs, discrete samples will be collected to confirm the reclamation requirement.
- An estimated 1,630 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.

Sincerely,
Ensolum, LLC

Kalei Jennings
Senior Scientist



Daniel R. Moir, PG
Senior Managing Geologist

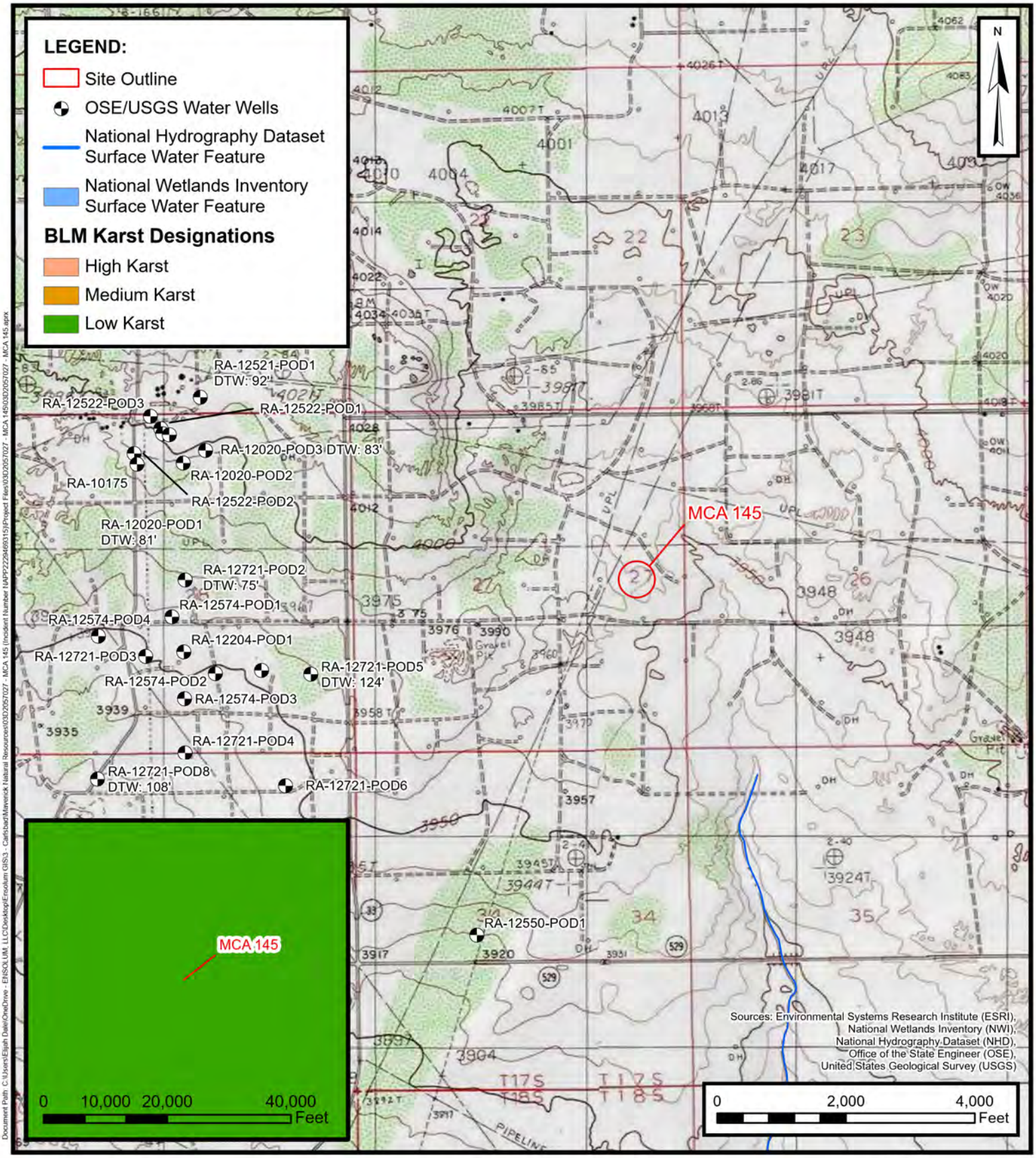
cc: Bryce Wagoner, Maverick Natural Resources, LLC
Bureau of Land Management

Appendices:

Figure 1	Site Location Map
Figure 2	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	NMOCD Notifications
Appendix F	Final C-141

ENSOLUM

FIGURES



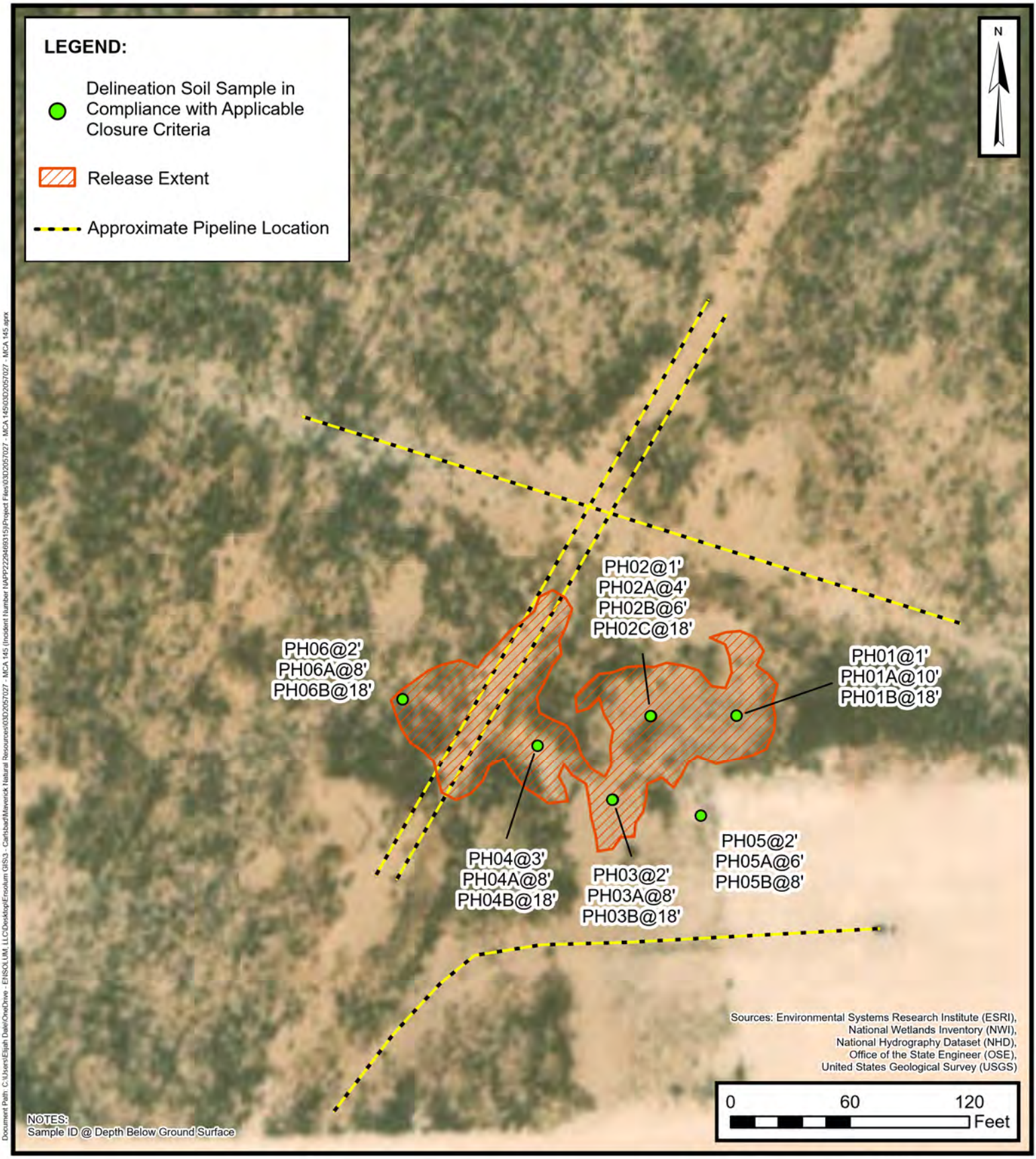
Document Path: C:\Users\Elijah Dale\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\3 - Carlsbad\Maverick Natural Resources\03020507027 - MCA 145 (Incident Number NAPP2229469315)\Project Files\03020507027 - MCA 145.aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

Maverick Natural Resources, LLC
MCA 145
NAPP2229469315
Unit H Sec 27 T17S R32E
Lea County, New Mexico

FIGURE
1



Document Path: C:\Users\Elijah Dale\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\3 - Carlsbad\Maverick Natural Resources\03D2057027 - MCA 145 (Incident Number NAPP2229469315)\Project Files\03D2057027 - MCA 145\03D2057027 - MCA 145.aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Samples

Maverick Natural Resources, LLC
MCA 145
NAPP2229469315
Unit H Sec 27 T17S R32E
Lea County, New Mexico

FIGURE
2

ENSOLUM

TABLES

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
MCA Unit 145
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)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**20,000**
Delineation Soil Samples										
PH01	10/21/2022	1	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	1,940*
PH01A	10/21/2022	10	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	6,900
PH01B	10/21/2022	18	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	3,350
PH02	10/21/2022	1	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	4,550*
PH02A	10/21/2022	4	<0.00202	0.00627	<50.0	<50.0	<50.0	<50.0	<50.0	16,000
PH02B	10/24/2022	6	0.00269	0.0259	<49.9	<49.9	<49.9	<49.9	<49.9	7,610
PH02C	10/24/2022	18	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	8,270
PH03	10/24/2022	2	<0.00200	0.0115	<50.0	<50.0	<50.0	<50.0	<50.0	7,310*
PH03A	10/24/2022	18	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	<49.8	4,440
PH03B	10/24/2022	8	0.00402	0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	10,900
PH04	10/31/2022	3	<0.00200	0.00502	<49.8	<49.8	<49.8	<49.8	<49.8	12,300*
PH04A	10/31/2022	8	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	7,510
PH04B	10/31/2022	18	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	11,100
PH05	10/31/2022	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	118
PH05A	10/31/2022	6	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	23.5
PH05B	10/31/2022	8	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	41.6
PH06	10/31/2022	2	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	5,860*
PH06A	10/31/2022	8	0.0796	0.0942	<49.9	<49.9	<49.9	<49.9	<49.9	10,300
PH06B	10/31/2022	18	0.00464	0.0149	<50.0	<50.0	<50.0	<50.0	<50.0	5,660

Notes:

bgs: below ground surface
NE: Not Established
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
** indicates sample was collected in area to be reclaimed after remediation is complete; the reclamation criteria applies to these samples*
Grey text represents samples that have been excavated

ENSOLUM

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)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	RA 12721 POD5	2	4	4	28	17S	32E	615650	3629961

Driller License: 1456 **Driller Company:** WHITE DRILLING COMPANY

Driller Name: WHITE, JOHNNOWN.GENER

Drill Start Date: 04/27/2020 **Drill Finish Date:** 04/28/2020 **Plug Date:**

Log File Date: 05/18/2020 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:**

Casing Size: 2.00 **Depth Well:** 130 feet **Depth Water:** 124 feet

Water Bearing Stratifications:	Top	Bottom	Description
	109	121	Sandstone/Gravel/Conglomerate
	121	125	Sandstone/Gravel/Conglomerate
	125	130	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	90	130

ENSOLUM

APPENDIX B

Photographic Log

ENSOLUM

Photographic Log
Maverick Natural Resources, LLC
MCA Unit #145
NAPP2229469315

Photograph 1 Date: Oct. 20, 2022
Description: Initial release
View Northeast

Photograph 2 Date: Oct. 20, 2022
Description: Initial release
View Northwest

Photograph 3 Date: Oct. 31, 2022
Description: Pothole at depth of 18' bgs

Photograph 4 Date: Oct. 31, 2022
Description: Backfilled potholes, post delineation activities
View West

ENSOLUM

APPENDIX C

Lithologic/ Soil Sampling Logs

ENSOLUM

	Sample Name: PH02	Date: 10-21-2022
	Site Name: MCA 145	
	Incident Number: nAPP2229469315	
	Job Number: 03D2057027	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS/ PV	Method: Trackhoe
Coordinates: 32.805713, -103.748734	Hole Diameter:	Total Depth: 18'

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
						0		
	4,065	5.8		PH01	1	1	SP-SM	Poorly graded red/brown sand, vpgraded, strong odor
	8,820.0	10.6				2		
	9,520.0	29.9				3		
	16,592.0	35.5		PH01A	4	4	SP-SM	Poorly graded light tan sand mixed with caliche
						5		
	14,067.0	187.0		PH01B	6	6	SP-SM	Poorly graded sand, tan, vpgraded, strong odor, vfgn
						7		
	14,067.0	24				8	SP-SM	Poorly graded sand w/silt, ltbn-tan, vpgraded, vfgn, silty, stong odor
						9		
	9,520.0	10.1				10	SP-SM	Poorly graded sand w/silt, ltbn, vfgn, vsilty, vpgraded, strong odor
						11		
	7,946.0	5.1				12	SM	Silty sand, vsilty, ltbn, vfgrn, vpgrading, stong odor
						13		
	8,596.0	5.3				14	SM	Silty sand w/gravel, tan, vfgn, vpgraded, sl odor
						15		
	10,858.0	6.5				16	SM	Silty sand, ltbn-red, vfgn, vpgraded, sl odor
						17		
	4,452.0	1.6		PH01C	18	18	SP-SM	Poorly graded sand w/silt/gravel, ltbn-red, vfgn, vpgraded, v strong odor

TD @ 18' BGS

ENSOLUM

	Sample Name: PH02	Date: 10-24-2022
	Site Name: MCA 145	
	Incident Number: nAPP2229469315	
	Job Number: 03D2057027	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Julianna Falcomata	Method: Backhoe
Coordinates: 32.805713, -103.748734	Hole Diameter:	Total Depth: 18'

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
						0		
	6,776	24.2		PH02	1	1	SP-SM	Poorly graded red/brown sand, vpgraded, strong odor
	2,200.0	4.3				2		
	6,776.0	6.4				3		
	2,151.0	45.5		PH02A	4	4	SP-SM	Poorly graded light tan sand mixed with caliche
						5		
	12,986.4	1.8		PH02B	6	6	SP-SM	Poorly graded sand, tan, vpgraded, strong odor, vfgn
						7		
	10,281.6	9.9				8	SP-SM	Poorly graded sand w/silt, ltbn-tan, vpgraded, vfgn, silty, stong odor
						9		
	5,964.0	7.8				10	SP-SM	Poorly graded sand w/silt, ltbn, vfgn, vsilty, vpgraded, strong odor
						11		
	9,520.0	4				12	SM	Silty sand, vsilty, ltbn, vfgrn, vpgrading, stong odor
						13		
	9,520.0	1.3				14	SM	Silty sand w/gravel, tan, vfgn, vpgraded, sl odor
						15		
	6,988.8	0.4				16	SM	Silty sand, ltbn-red, vfgn, vpgraded, sl odor
						17		
	8,820.0	0.2		PH02C	18	18	SP-SM	Poorly graded sand w/silt/gravel, ltbn-red, vfgn, vpgraded, v strong odor

TD @ 18' BGS

ENSOLUM

	Sample Name: PH03	Date: 10-24-2022
	Site Name: MCA 145	
	Incident Number: nAPP2229469315	
	Job Number: 03D2057027	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Julianna Falcomata	Method: Trackhoe
Coordinates: 32.805584, -103.748786	Hole Diameter:	Total Depth: 18'

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
						0		
	6,686	1.2				1	SP	Silty sand, lt- med bn, vfgn, vpgraded, strong odor
	4,429.6	2.5		PH03	2	2	SP-SM	Poorly graded sand w/ silt, ltbn, vfgn, vpgraded, strong odor
	11,468.8	11.9				3	SP-SM	Poorly graded sand w/ silt, ltbn-tan, vfgrn, vpgrading, strong odor
	16,818.4	12.5				4	SP-SM	Poorly graded sand w/ silt, tan, vfgn, vpgrading, strong odor
						5		
	12,482.4	13.0				6	SP-SM	Poorly graded sand w/ silt, tan, vfgn, vpgraded, stong odor
						7		
	17,953.6	12.6		PH03B	8	8	SM	Silty sand, tan, vfgn, vpgraded, strong odor
						9		
	12,482.4	8.9				10	SM	Silty sand, tan, vfgn, vpgraded, strong odor
						11		
	12,482.4	1.4				12	SM	silty sand, tan-sl ylwsh, vfgn, vpgraded, strong odor
						13		
	11,468.8	1.3				14	SM	Silty sand, tan w/ grnsh tint, vfgn, vpgraded, sl odor
						15		
	11,468.8	0.2				16	SM	Silty sand, tan-ltbn-brnsh red, vfgn, vpgraded, sl odor
						17		
	4,429.6	0		PH03A	18	18	SM	Silty sand, ltbn-brnshrd, vfgn, vpgraded, sl odor

TD @ 18' BGS

ENSOLUM

	Sample Name: PH04	Date: 10-31-2022
	Site Name: MCA 145	
	Incident Number: nAPP2229469315	
	Job Number: 03D2057027	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Julianna Falcomata	Method: Backhoe
Coordinates: 32.805664, -103.748900	Hole Diameter:	Total Depth: 18'

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
						0		
	4,653.6	2.8				1	SP-SM	Poorly graded sand w/silt, med bn-tan, vsilty, strong odor
	5,499.2	10.4				2	SM	Silty sand w/gravel, tan-ltbn-med bn, strong odor
	19,790.4	19.5		PH04	3	3	SP-SM	Poorly graded sand w/silt, ltbn-tan, v strong odor
	14,067.4	65.4				4	SP-SM	Poorly graded sand w/silt, tan, v strong odor
						5		
	12,986.4	18.9				6	SP-SM	Poorly graded sand w/silt, tan, v strong odor
						7		
	14,067.2	23.5		PH04A	8	8	SP-SM	Poorly graded sand w/silt, tan-ltbn, v stong odor
						9		
	12,006.4	6.8				10	SP-SM	Poorly graded sand w/silt, ltbn-med bn, v stong odor, sl wet
						11		
	12,006.4	24.8				12	SP	Poorly graded sand w/gravel, tan-ltbn, strong odor
						13		
	6,462.4	3.2				14	SP-SM	Poorly graded sand w/silt, slgrn tint-tan, strong odor
						15		
	8,164.8	2.8				16	SP-SM	Poorly graded sand w/silt, ltbn-tan, strong odor
						17		
	12,006.4	1.2		PH04B	18	18	SP	Poorly graded sand w/gravel, redish bn, strong odor

TD @ 18' BGS

ENSOLUM

	Sample Name: PH05	Date: 10-31-2022
	Site Name: MCA 145	
	Incident Number: nAPP2229469315	
	Job Number: 03D2057027	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Julianna Falcomata	Method: Backhoe
Coordinates: 32.805759, -103.749045	Hole Diameter:	Total Depth: 18'

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
						0		
	<168 ND	0.1				1	SM	Silty sand, med bn-drk bn, no odo
	<168 ND	0.0		PH05		2	SM	Silty sand, med bn, no odor, sl wet
	<168 ND	0.0				3	SM	Silty sand, med bn, no odor, v silty
	<168 ND	0.1				4	SM	Silty sand, ltbn-tan, v silty, no odor
						5		
	<168 ND	0.0		PH05A		6	SM	silty sand, tan, v silty, no odor
						7		
	<168 ND	0.0		PH05B		8		SAA

TD @ 8' BGS

ENSOLUM

Sample Name: PH06	Date: 10-31-2022
Site Name: MCA 145	
Incident Number: nAPP2229469315	
Job Number: 03D2057027	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Julianna Falcomata / Method: Backhoe
Coordinates: 32.805719, -103.749163	Hole Diameter: / Total Depth: 18'

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
						0		
	2,128.0	0.5				1	SM	Silty sand, med bn-drk bn, sl odor
	5,499.2	2.7		PH06	2	2	SM	Silty sand, med bn-redsh bn, sl odor
	5,499.2	2.0				3	SM	Silty sand, med bn-redshbn, v silty, sl odor
	8,820.0	3.0				4	SM	Silty sand, med bn, v silty, sl odor
						5		
	8,154.8	2.3				6	SM	Silty sand, med bn-sl drk bn, v silty, sl odor
						7		
	14,067.0	55.6		PH06A	8	8	SP-SM	Poorly graded sand w/gravel, tan-ltbn, v strong odor
						9		
	12,986.4	36.1				10	SP-SM	Poorly graded sand w/gravel, tan-ltbn, v strong odor
						11		
	7,560.0	2.1				12	SM	Silty sand, tan-grnsh tint, v strong odor
						13		
	8,164.8	1.9				14	SM	Silty sand, grnsh bn-tan, v silty, v strong odor
						15		
	8,820.0	3.3				16	SP-SM	Poorly graded sand w/gravel, tan-grnsh tint, v strong odor
						17		
	6,988.8	3.0		PH06B	18	18	SM	Silty sand, redsh bn-grnsh tan, strong odor

TD @ 18' BGS

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3275-1
Client Project/Site: MCA 145

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/26/2022 4:47:42 PM

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

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

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

Client: Ensolum
Project/Site: MCA 145

Laboratory Job ID: 890-3275-1

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-3275-1
Project/Site: MCA 145

Qualifiers

GC VOA

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
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 145

Job ID: 890-3275-1

Job ID: 890-3275-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3275-1

Receipt
The samples were received on 10/24/2022 3:50 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 7.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH02A (890-3275-1), PH02B (890-3275-2), PH03A (890-3275-3), PH03B (890-3275-4) and PH03C (890-3275-5).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCS 880-37872/1-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
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 880-37865 and analytical batch 880-37905 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 145

Job ID: 890-3275-1

Client Sample ID: PH02A

Lab Sample ID: 890-3275-1
Matrix: Solid
Date Collected: 10/24/22 09:15
Date Received: 10/24/22 15:50
Sample Depth: 6

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00269**		0.00200		mg/Kg		10/26/22 08:00	10/26/22 12:14	1
Toluene	**0.00820**		0.00200		mg/Kg		10/26/22 08:00	10/26/22 12:14	1
Ethylbenzene	**0.00284**		0.00200		mg/Kg		10/26/22 08:00	10/26/22 12:14	1
m-Xylene & p-Xylene	**0.00754**		0.00401		mg/Kg		10/26/22 08:00	10/26/22 12:14	1
o-Xylene	**0.00459**		0.00200		mg/Kg		10/26/22 08:00	10/26/22 12:14	1
Xylenes, Total	**0.0121**		0.00401		mg/Kg		10/26/22 08:00	10/26/22 12:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*10/26/22 08:00*	*10/26/22 12:14*	*1*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*10/26/22 08:00*	*10/26/22 12:14*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0259**		0.00401		mg/Kg			10/26/22 17:42	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			10/26/22 15:33	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/26/22 08:35	10/26/22 12:55	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/26/22 08:35	10/26/22 12:55	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/26/22 08:35	10/26/22 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*10/26/22 08:35*	*10/26/22 12:55*	*1*
o-Terphenyl	*99*		*70 - 130*	*10/26/22 08:35*	*10/26/22 12:55*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7610**	**F1**	99.8		mg/Kg			10/26/22 12:05	20

Client Sample ID: PH02B

Lab Sample ID: 890-3275-2
Matrix: Solid
Date Collected: 10/24/22 10:15
Date Received: 10/24/22 15:50
Sample Depth: 18

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		10/26/22 10:34	10/26/22 12:34	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/26/22 10:34	10/26/22 12:34	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/26/22 10:34	10/26/22 12:34	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/26/22 10:34	10/26/22 12:34	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/26/22 10:34	10/26/22 12:34	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/26/22 10:34	10/26/22 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*10/26/22 10:34*	*10/26/22 12:34*	*1*

Client Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

Client Sample ID: PH02B

Lab Sample ID: 890-3275-2
Matrix: Solid
Date Collected: 10/24/22 10:15
Date Received: 10/24/22 15:50
Sample Depth: 18

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*10/26/22 10:34*	*10/26/22 12:34*	*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			10/26/22 16:22	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			10/26/22 15:33	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/26/22 08:35	10/26/22 13:16	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/26/22 08:35	10/26/22 13:16	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/26/22 08:35	10/26/22 13:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*77*		*70 - 130*	*10/26/22 08:35*	*10/26/22 13:16*	*1*
o-Terphenyl	*88*		*70 - 130*	*10/26/22 08:35*	*10/26/22 13:16*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8270**		50.2	mg/Kg			10/26/22 12:19	10

Client Sample ID: PH03A

Lab Sample ID: 890-3275-3
Matrix: Solid
Date Collected: 10/24/22 12:15
Date Received: 10/24/22 15:50
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/26/22 10:34	10/26/22 12:55	1
Toluene	**0.00703**		0.00200	mg/Kg		10/26/22 10:34	10/26/22 12:55	1
Ethylbenzene	**0.00245**		0.00200	mg/Kg		10/26/22 10:34	10/26/22 12:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/26/22 10:34	10/26/22 12:55	1
o-Xylene	**0.00203**		0.00200	mg/Kg		10/26/22 10:34	10/26/22 12:55	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/26/22 10:34	10/26/22 12:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*10/26/22 10:34*	*10/26/22 12:55*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*10/26/22 10:34*	*10/26/22 12:55*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0115**		0.00400	mg/Kg			10/26/22 16:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			10/26/22 15:33	1

Client Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

Client Sample ID: PH03A

Lab Sample ID: 890-3275-3
Matrix: Solid
Date Collected: 10/24/22 12:15
Date Received: 10/24/22 15:50
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		10/26/22 08:35	10/26/22 13:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/26/22 08:35	10/26/22 13:38	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/26/22 08:35	10/26/22 13:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*10/26/22 08:35*	*10/26/22 13:38*	*1*
o-Terphenyl	*97*		*70 - 130*	*10/26/22 08:35*	*10/26/22 13:38*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7310**		99.6		mg/Kg			10/26/22 12:24	20

Client Sample ID: PH03B

Lab Sample ID: 890-3275-4
Matrix: Solid
Date Collected: 10/24/22 13:38
Date Received: 10/24/22 15:50
Sample Depth: 18

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		10/26/22 10:34	10/26/22 13:15	1
Toluene	<0.00202	U	0.00202		mg/Kg		10/26/22 10:34	10/26/22 13:15	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		10/26/22 10:34	10/26/22 13:15	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		10/26/22 10:34	10/26/22 13:15	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		10/26/22 10:34	10/26/22 13:15	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		10/26/22 10:34	10/26/22 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*10/26/22 10:34*	*10/26/22 13:15*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*10/26/22 10:34*	*10/26/22 13:15*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			10/26/22 16:22	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			10/26/22 15:33	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		10/26/22 08:35	10/26/22 13:59	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		10/26/22 08:35	10/26/22 13:59	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		10/26/22 08:35	10/26/22 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*81*		*70 - 130*	*10/26/22 08:35*	*10/26/22 13:59*	*1*
o-Terphenyl	*95*		*70 - 130*	*10/26/22 08:35*	*10/26/22 13:59*	*1*

Client Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

Client Sample ID: PH03B

Lab Sample ID: 890-3275-4
Matrix: Solid
Date Collected: 10/24/22 13:38
Date Received: 10/24/22 15:50
Sample Depth: 18

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4440**		49.6		mg/Kg			10/26/22 12:29	10

Client Sample ID: PH03C

Lab Sample ID: 890-3275-5
Matrix: Solid
Date Collected: 10/24/22 12:45
Date Received: 10/24/22 15:50
Sample Depth: 8

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00402**		0.00199		mg/Kg		10/26/22 10:34	10/26/22 13:36	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/26/22 10:34	10/26/22 13:36	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/26/22 10:34	10/26/22 13:36	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/26/22 10:34	10/26/22 13:36	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/26/22 10:34	10/26/22 13:36	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/26/22 10:34	10/26/22 13:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*10/26/22 10:34*	*10/26/22 13:36*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*10/26/22 10:34*	*10/26/22 13:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00402**		0.00398		mg/Kg			10/26/22 16:22	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			10/26/22 15:33	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/26/22 08:35	10/26/22 14:21	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/26/22 08:35	10/26/22 14:21	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/26/22 08:35	10/26/22 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*10/26/22 08:35*	*10/26/22 14:21*	*1*
o-Terphenyl	*97*		*70 - 130*	*10/26/22 08:35*	*10/26/22 14:21*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10900**		99.8		mg/Kg			10/26/22 12:34	20

Surrogate Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3275-1	PH02A	118	114
890-3275-1 MS	PH02A	95	100
890-3275-1 MSD	PH02A	95	94
890-3275-2	PH02B	109	97
890-3275-3	PH03A	116	96
890-3275-4	PH03B	95	97
890-3275-5	PH03C	95	101
LCS 880-37872/1-A	Lab Control Sample	138 S1+	115
LCSD 880-37872/2-A	Lab Control Sample Dup	88	98
MB 880-37872/5-A	Method Blank	111	104

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)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3271-A-4-C MS	Matrix Spike	77	81
890-3271-A-4-D MSD	Matrix Spike Duplicate	78	82
890-3275-1	PH02A	84	99
890-3275-2	PH02B	77	88
890-3275-3	PH03A	83	97
890-3275-4	PH03B	81	95
890-3275-5	PH03C	84	97
LCS 880-37854/2-A	Lab Control Sample	90	109
LCSD 880-37854/3-A	Lab Control Sample Dup	109	126
MB 880-37854/1-A	Method Blank	98	123

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37872/5-A
Matrix: Solid
Analysis Batch: 37852

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37872

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 08:00	10/26/22 11:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 08:00	10/26/22 11:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 08:00	10/26/22 11:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 08:00	10/26/22 11:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 08:00	10/26/22 11:45	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 08:00	10/26/22 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*10/26/22 08:00*	*10/26/22 11:45*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*10/26/22 08:00*	*10/26/22 11:45*	*1*

Lab Sample ID: LCS 880-37872/1-A
Matrix: Solid
Analysis Batch: 37852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37872

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1010		mg/Kg		101	70 - 130		
Toluene			0.100	0.1058		mg/Kg		106	70 - 130		
Ethylbenzene			0.100	0.09017		mg/Kg		90	70 - 130		
m-Xylene & p-Xylene			0.200	0.1792		mg/Kg		90	70 - 130		
o-Xylene			0.100	0.1103		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*

Lab Sample ID: LCSD 880-37872/2-A
Matrix: Solid
Analysis Batch: 37852

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37872

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1018		mg/Kg		102	70 - 130	1	35
Toluene			0.100	0.1069		mg/Kg		107	70 - 130	1	35
Ethylbenzene			0.100	0.09693		mg/Kg		97	70 - 130	7	35
m-Xylene & p-Xylene			0.200	0.1973		mg/Kg		99	70 - 130	10	35
o-Xylene			0.100	0.1038		mg/Kg		104	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 890-3275-1 MS
Matrix: Solid
Analysis Batch: 37852

Client Sample ID: PH02A
Prep Type: Total/NA
Prep Batch: 37872

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	0.00269		0.0998	0.09014		mg/Kg		88	70 - 130		
Toluene	0.00820		0.0998	0.09699		mg/Kg		89	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

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

Lab Sample ID: 890-3275-1 MS
Matrix: Solid
Analysis Batch: 37852

Client Sample ID: PH02A
Prep Type: Total/NA
Prep Batch: 37872

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.00284		0.0998	0.08880		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	0.00754		0.200	0.1824		mg/Kg		88	70 - 130
o-Xylene	0.00459		0.0998	0.09723		mg/Kg		93	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 890-3275-1 MSD
Matrix: Solid
Analysis Batch: 37852

Client Sample ID: PH02A
Prep Type: Total/NA
Prep Batch: 37872

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.00269		0.0990	0.09489		mg/Kg		93	70 - 130	5	35
Toluene	0.00820		0.0990	0.09955		mg/Kg		92	70 - 130	3	35
Ethylbenzene	0.00284		0.0990	0.09259		mg/Kg		91	70 - 130	4	35
m-Xylene & p-Xylene	0.00754		0.198	0.1897		mg/Kg		92	70 - 130	4	35
o-Xylene	0.00459		0.0990	0.1018		mg/Kg		98	70 - 130	5	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

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

Lab Sample ID: MB 880-37854/1-A
Matrix: Solid
Analysis Batch: 37857

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37854

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		10/26/22 08:35	10/26/22 09:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/26/22 08:35	10/26/22 09:08	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/26/22 08:35	10/26/22 09:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*10/26/22 08:35*	*10/26/22 09:08*	*1*
o-Terphenyl	*123*		*70 - 130*	*10/26/22 08:35*	*10/26/22 09:08*	*1*

Lab Sample ID: LCS 880-37854/2-A
Matrix: Solid
Analysis Batch: 37857

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37854

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	975.8		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)			1000	840.0		mg/Kg		84	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

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

Lab Sample ID: LCS 880-37854/2-A
Matrix: Solid
Analysis Batch: 37857

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37854

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	109		70 - 130

Lab Sample ID: LCSD 880-37854/3-A
Matrix: Solid
Analysis Batch: 37857

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37854

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	800.4		mg/Kg		80	70 - 130	20	20
Diesel Range Organics (Over C10-C28)			1000	939.0		mg/Kg		94	70 - 130	11	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	126		70 - 130

Lab Sample ID: 890-3271-A-4-C MS
Matrix: Solid
Analysis Batch: 37857

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37854

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	1099		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.8	U	998	932.0		mg/Kg		92	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: 890-3271-A-4-D MSD
Matrix: Solid
Analysis Batch: 37857

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37854

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	1173		mg/Kg		115	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	942.1		mg/Kg		93	70 - 130	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	78		70 - 130
o-Terphenyl	82		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37865/1-A
Matrix: Solid
Analysis Batch: 37905

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			10/26/22 11:50	1

Lab Sample ID: LCS 880-37865/2-A
Matrix: Solid
Analysis Batch: 37905

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 880-37865/3-A
Matrix: Solid
Analysis Batch: 37905

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	256.3		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-3275-1 MS
Matrix: Solid
Analysis Batch: 37905

Client Sample ID: PH02A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	7610	F1	4990	15290	F1	mg/Kg		154	90 - 110		

Lab Sample ID: 890-3275-1 MSD
Matrix: Solid
Analysis Batch: 37905

Client Sample ID: PH02A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	7610	F1	4990	15290	F1	mg/Kg		154	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

GC VOA

Analysis Batch: 37852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Total/NA	Solid	8021B	37872
890-3275-2	PH02B	Total/NA	Solid	8021B	37872
890-3275-3	PH03A	Total/NA	Solid	8021B	37872
890-3275-4	PH03B	Total/NA	Solid	8021B	37872
890-3275-5	PH03C	Total/NA	Solid	8021B	37872
MB 880-37872/5-A	Method Blank	Total/NA	Solid	8021B	37872
LCS 880-37872/1-A	Lab Control Sample	Total/NA	Solid	8021B	37872
LCSD 880-37872/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37872
890-3275-1 MS	PH02A	Total/NA	Solid	8021B	37872
890-3275-1 MSD	PH02A	Total/NA	Solid	8021B	37872

Prep Batch: 37872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Total/NA	Solid	5035	
890-3275-2	PH02B	Total/NA	Solid	5035	
890-3275-3	PH03A	Total/NA	Solid	5035	
890-3275-4	PH03B	Total/NA	Solid	5035	
890-3275-5	PH03C	Total/NA	Solid	5035	
MB 880-37872/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37872/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37872/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3275-1 MS	PH02A	Total/NA	Solid	5035	
890-3275-1 MSD	PH02A	Total/NA	Solid	5035	

Analysis Batch: 37946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Total/NA	Solid	Total BTEX	
890-3275-2	PH02B	Total/NA	Solid	Total BTEX	
890-3275-3	PH03A	Total/NA	Solid	Total BTEX	
890-3275-4	PH03B	Total/NA	Solid	Total BTEX	
890-3275-5	PH03C	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 37854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Total/NA	Solid	8015NM Prep	
890-3275-2	PH02B	Total/NA	Solid	8015NM Prep	
890-3275-3	PH03A	Total/NA	Solid	8015NM Prep	
890-3275-4	PH03B	Total/NA	Solid	8015NM Prep	
890-3275-5	PH03C	Total/NA	Solid	8015NM Prep	
MB 880-37854/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37854/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37854/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3271-A-4-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3271-A-4-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Total/NA	Solid	8015B NM	37854
890-3275-2	PH02B	Total/NA	Solid	8015B NM	37854

QC Association Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

GC Semi VOA (Continued)

Analysis Batch: 37857 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-3	PH03A	Total/NA	Solid	8015B NM	37854
890-3275-4	PH03B	Total/NA	Solid	8015B NM	37854
890-3275-5	PH03C	Total/NA	Solid	8015B NM	37854
MB 880-37854/1-A	Method Blank	Total/NA	Solid	8015B NM	37854
LCS 880-37854/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37854
LCSD 880-37854/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37854
890-3271-A-4-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37854
890-3271-A-4-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37854

Analysis Batch: 37938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Total/NA	Solid	8015 NM	
890-3275-2	PH02B	Total/NA	Solid	8015 NM	
890-3275-3	PH03A	Total/NA	Solid	8015 NM	
890-3275-4	PH03B	Total/NA	Solid	8015 NM	
890-3275-5	PH03C	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Soluble	Solid	DI Leach	
890-3275-2	PH02B	Soluble	Solid	DI Leach	
890-3275-3	PH03A	Soluble	Solid	DI Leach	
890-3275-4	PH03B	Soluble	Solid	DI Leach	
890-3275-5	PH03C	Soluble	Solid	DI Leach	
MB 880-37865/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37865/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37865/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3275-1 MS	PH02A	Soluble	Solid	DI Leach	
890-3275-1 MSD	PH02A	Soluble	Solid	DI Leach	

Analysis Batch: 37905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3275-1	PH02A	Soluble	Solid	300.0	37865
890-3275-2	PH02B	Soluble	Solid	300.0	37865
890-3275-3	PH03A	Soluble	Solid	300.0	37865
890-3275-4	PH03B	Soluble	Solid	300.0	37865
890-3275-5	PH03C	Soluble	Solid	300.0	37865
MB 880-37865/1-A	Method Blank	Soluble	Solid	300.0	37865
LCS 880-37865/2-A	Lab Control Sample	Soluble	Solid	300.0	37865
LCSD 880-37865/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37865
890-3275-1 MS	PH02A	Soluble	Solid	300.0	37865
890-3275-1 MSD	PH02A	Soluble	Solid	300.0	37865

Lab Chronicle

Client: Ensolum
Job ID: 890-3275-1
Project/Site: MCA 145

Client Sample ID: PH02A
Lab Sample ID: 890-3275-1
Date Collected: 10/24/22 09:15
Matrix: Solid
Date Received: 10/24/22 15:50

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	37872	10/26/22 08:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37852	10/26/22 12:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37946	10/26/22 17:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			37938	10/26/22 15:33	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37854	10/26/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37857	10/26/22 12:55	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	37865	10/26/22 10:38	SMC	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	37905	10/26/22 12:05	CH	EET MID

Client Sample ID: PH02B
Lab Sample ID: 890-3275-2
Date Collected: 10/24/22 10:15
Matrix: Solid
Date Received: 10/24/22 15:50

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	37872	10/26/22 10:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37852	10/26/22 12:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37946	10/26/22 16:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			37938	10/26/22 15:33	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	37854	10/26/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37857	10/26/22 13:16	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	37865	10/26/22 10:38	SMC	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	37905	10/26/22 12:19	CH	EET MID

Client Sample ID: PH03A
Lab Sample ID: 890-3275-3
Date Collected: 10/24/22 12:15
Matrix: Solid
Date Received: 10/24/22 15:50

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	37872	10/26/22 10:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37852	10/26/22 12:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37946	10/26/22 16:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			37938	10/26/22 15:33	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	37854	10/26/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37857	10/26/22 13:38	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	37865	10/26/22 10:38	SMC	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	37905	10/26/22 12:24	CH	EET MID

Client Sample ID: PH03B
Lab Sample ID: 890-3275-4
Date Collected: 10/24/22 13:38
Matrix: Solid
Date Received: 10/24/22 15:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	37872	10/26/22 10:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37852	10/26/22 13:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37946	10/26/22 16:22	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Job ID: 890-3275-1
Project/Site: MCA 145

Client Sample ID: PH03B
Lab Sample ID: 890-3275-4
Date Collected: 10/24/22 13:38
Matrix: Solid
Date Received: 10/24/22 15:50

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			37938	10/26/22 15:33	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	37854	10/26/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37857	10/26/22 13:59	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	37865	10/26/22 10:38	SMC	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	37905	10/26/22 12:29	CH	EET MID

Client Sample ID: PH03C
Lab Sample ID: 890-3275-5
Date Collected: 10/24/22 12:45
Matrix: Solid
Date Received: 10/24/22 15:50

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	37872	10/26/22 10:34	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37852	10/26/22 13:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37946	10/26/22 16:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			37938	10/26/22 15:33	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37854	10/26/22 08:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37857	10/26/22 14:21	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	37865	10/26/22 10:38	SMC	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	37905	10/26/22 12:34	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 145

Job ID: 890-3275-1

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

Method Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3275-1

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
Job ID: 890-3275-1
Project/Site: MCA 145

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3275-1	PH02A	Solid	10/24/22 09:15	10/24/22 15:50	6
890-3275-2	PH02B	Solid	10/24/22 10:15	10/24/22 15:50	18
890-3275-3	PH03A	Solid	10/24/22 12:15	10/24/22 15:50	2
890-3275-4	PH03B	Solid	10/24/22 13:38	10/24/22 15:50	18
890-3275-5	PH03C	Solid	10/24/22 12:45	10/24/22 15:50	8

eurofins | 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:	Nalei Jennings	Bill to: (if different)	
Company Name:	Ensolum, LLC	Company Name:	
Address:	3122 Nat'l Parks Hwy	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	817-683-2503	Email:	njennings@ensolum.com

Work Order Comments

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

Project Name:	MCA 145	Turn Around	
Project Number:		☐ Routine ☑ Rush	
Project Location:	32.805322, -103.748877	Due Date:	24 hr
Sampler's Name:	Juliana Falconata	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:	IR#1007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	7.2
Total Containers:		Corrected Temperature:	7.0

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2SO_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Parameters: BTEX	TPH 8015	Chlorides	Sample Comments
PH02A	S	10-24-12	0915	6'	G	1	✓	✓	✓	
PH02B	S	10-24-12	1015	18'	G	1	✓	✓	✓	
PH03A	S	10-24-12	1215	2'	G	1	✓	✓	✓	
PH03B	S	10-24-12	1338	18'	G	1	✓	✓	✓	
PH03C	S	10-24-12	1245	8'	G	1	✓	✓	✓	

890-3275 Chain of Custody

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10.24.22 1550	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3275-1
SDG Number:

Login Number: 3275
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: 890-3275-1
SDG Number:

Login Number: 3275
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/26/22 10:29 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	

eurofins | Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3339-1
Laboratory Sample Delivery Group: 03D2057027
Client Project/Site: MCA145

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
11/3/2022 12:38:27 PM

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

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

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

Client: Ensolum
Project/Site: MCA145

Laboratory Job ID: 890-3339-1
SDG: 03D2057027

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
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: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Job ID: 890-3339-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3339-1

Receipt
The samples were received on 10/31/2022 3:54 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 3.4°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH04A (890-3339-1), PH04B (890-3339-2), PH04C (890-3339-3), PH05A (890-3339-4), PH05B (890-3339-5), PH05C (890-3339-6), PH06A (890-3339-7), PH06B (890-3339-8) and PH06C (890-3339-9).

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-21004-A-1-B), (880-21004-A-1-C MS) and (880-21004-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: LCS biased low. Since only an acceptable LCS or LCSD is required per the method, the data has been qualified and reported.(LCS 880-38447/2-A)

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38447 and analytical batch 880-38456 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 and precision for preparation batch 880-38445 and analytical batch 880-38533 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: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH04A

Date Collected: 10/31/22 09:45
Date Received: 10/31/22 15:54
Sample Depth: 3'

Lab Sample ID: 890-3339-1
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		11/02/22 10:00	11/02/22 11:48	1
Toluene	**0.00502**		0.00200		mg/Kg		11/02/22 10:00	11/02/22 11:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 11:48	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/02/22 10:00	11/02/22 11:48	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 11:48	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/02/22 10:00	11/02/22 11:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*11/02/22 10:00*	*11/02/22 11:48*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*11/02/22 10:00*	*11/02/22 11:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00502**		0.00399		mg/Kg			11/02/22 14:29	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			11/03/22 13:10	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		11/02/22 08:49	11/02/22 13:59	1
Diesel Range Organics (Over C10-C28)	<49.8	U *-	49.8		mg/Kg		11/02/22 08:49	11/02/22 13:59	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/02/22 08:49	11/02/22 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*72*		*70 - 130*	*11/02/22 08:49*	*11/02/22 13:59*	*1*
o-Terphenyl	*72*		*70 - 130*	*11/02/22 08:49*	*11/02/22 13:59*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12300**	**F1**	100		mg/Kg			11/02/22 15:05	20

Client Sample ID: PH04B

Date Collected: 10/31/22 10:00
Date Received: 10/31/22 15:54
Sample Depth: 8'

Lab Sample ID: 890-3339-2
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		11/02/22 10:00	11/02/22 12:09	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/02/22 10:00	11/02/22 12:09	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/02/22 10:00	11/02/22 12:09	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/02/22 10:00	11/02/22 12:09	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/02/22 10:00	11/02/22 12:09	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/02/22 10:00	11/02/22 12:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*11/02/22 10:00*	*11/02/22 12:09*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH04B

Date Collected: 10/31/22 10:00
Date Received: 10/31/22 15:54
Sample Depth: 8'

Lab Sample ID: 890-3339-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*11/02/22 10:00*	*11/02/22 12:09*	*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			11/02/22 14:29	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			11/03/22 13:10	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		11/02/22 08:49	11/02/22 14:21	1
Diesel Range Organics (Over C10-C28)	<49.9	U *-	49.9	mg/Kg		11/02/22 08:49	11/02/22 14:21	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/02/22 08:49	11/02/22 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*11/02/22 08:49*	*11/02/22 14:21*	*1*
o-Terphenyl	*80*		*70 - 130*	*11/02/22 08:49*	*11/02/22 14:21*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7510**		49.8	mg/Kg			11/02/22 15:20	10

Client Sample ID: PH04C

Date Collected: 10/31/22 10:50
Date Received: 10/31/22 15:54
Sample Depth: 18'

Lab Sample ID: 890-3339-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		11/02/22 10:00	11/02/22 12:29	1
Toluene	<0.00202	U	0.00202	mg/Kg		11/02/22 10:00	11/02/22 12:29	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		11/02/22 10:00	11/02/22 12:29	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		11/02/22 10:00	11/02/22 12:29	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		11/02/22 10:00	11/02/22 12:29	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		11/02/22 10:00	11/02/22 12:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*11/02/22 10:00*	*11/02/22 12:29*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*11/02/22 10:00*	*11/02/22 12:29*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			11/02/22 14:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/03/22 13:10	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH04C

Date Collected: 10/31/22 10:50
Date Received: 10/31/22 15:54
Sample Depth: 18'

Lab Sample ID: 890-3339-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *-	50.0		mg/Kg		11/02/22 08:49	11/02/22 14:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U *-	50.0		mg/Kg		11/02/22 08:49	11/02/22 14:43	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/02/22 08:49	11/02/22 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*11/02/22 08:49*	*11/02/22 14:43*	*1*
o-Terphenyl	*77*		*70 - 130*	*11/02/22 08:49*	*11/02/22 14:43*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11100**		99.0		mg/Kg			11/02/22 15:25	20

Client Sample ID: PH05A

Date Collected: 10/31/22 12:25
Date Received: 10/31/22 15:54
Sample Depth: 2'

Lab Sample ID: 890-3339-4

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		11/02/22 10:00	11/02/22 12:50	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 12:50	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 12:50	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/02/22 10:00	11/02/22 12:50	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 12:50	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/02/22 10:00	11/02/22 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*11/02/22 10:00*	*11/02/22 12:50*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*11/02/22 10:00*	*11/02/22 12:50*	*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			11/02/22 14:29	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/03/22 13:10	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		11/02/22 08:49	11/02/22 15:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U *-	50.0		mg/Kg		11/02/22 08:49	11/02/22 15:04	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/02/22 08:49	11/02/22 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*11/02/22 08:49*	*11/02/22 15:04*	*1*
o-Terphenyl	*83*		*70 - 130*	*11/02/22 08:49*	*11/02/22 15:04*	*1*

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH05A

Lab Sample ID: 890-3339-4
Matrix: Solid
Date Collected: 10/31/22 12:25
Date Received: 10/31/22 15:54
Sample Depth: 2'

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	118		4.97		mg/Kg			11/02/22 15:30	1

Client Sample ID: PH05B

Lab Sample ID: 890-3339-5
Matrix: Solid
Date Collected: 10/31/22 12:45
Date Received: 10/31/22 15:54
Sample Depth: 6'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 13:10	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 13:10	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 13:10	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/02/22 10:00	11/02/22 13:10	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/02/22 10:00	11/02/22 13:10	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/02/22 10:00	11/02/22 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*11/02/22 10:00*	*11/02/22 13:10*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*11/02/22 10:00*	*11/02/22 13:10*	*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			11/02/22 14:29	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/03/22 13:10	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		11/02/22 08:49	11/02/22 15:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U *-	50.0		mg/Kg		11/02/22 08:49	11/02/22 15:26	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/02/22 08:49	11/02/22 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*73*		*70 - 130*	*11/02/22 08:49*	*11/02/22 15:26*	*1*
o-Terphenyl	*74*		*70 - 130*	*11/02/22 08:49*	*11/02/22 15:26*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23.5		5.00		mg/Kg			11/02/22 15:35	1

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH05C

Lab Sample ID: 890-3339-6
Matrix: Solid
Date Collected: 10/31/22 12:50
Date Received: 10/31/22 15:54
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		11/02/22 10:00	11/02/22 13:31	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:31	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:31	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/02/22 10:00	11/02/22 13:31	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:31	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/02/22 10:00	11/02/22 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*11/02/22 10:00*	*11/02/22 13:31*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*11/02/22 10:00*	*11/02/22 13:31*	*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			11/02/22 14:29	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			11/03/22 13:10	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		11/02/22 08:49	11/02/22 15:48	1
Diesel Range Organics (Over C10-C28)	<49.8	U *-	49.8		mg/Kg		11/02/22 08:49	11/02/22 15:48	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/02/22 08:49	11/02/22 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*74*		*70 - 130*	*11/02/22 08:49*	*11/02/22 15:48*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/02/22 08:49*	*11/02/22 15:48*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41.6**		4.99		mg/Kg			11/02/22 15:50	1

Client Sample ID: PH06A

Lab Sample ID: 890-3339-7
Matrix: Solid
Date Collected: 10/31/22 13:15
Date Received: 10/31/22 15:54
Sample Depth: 2'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:51	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/02/22 10:00	11/02/22 13:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/02/22 10:00	11/02/22 13:51	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/02/22 10:00	11/02/22 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*11/02/22 10:00*	*11/02/22 13:51*	*1*

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH06A

Lab Sample ID: 890-3339-7
Matrix: Solid
Date Collected: 10/31/22 13:15
Date Received: 10/31/22 15:54
Sample Depth: 2'

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*11/02/22 10:00*	*11/02/22 13:51*	*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			11/02/22 14:29	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			11/03/22 13:10	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		11/02/22 08:49	11/02/22 16:10	1
Diesel Range Organics (Over C10-C28)	<49.8	U *-	49.8	mg/Kg		11/02/22 08:49	11/02/22 16:10	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/02/22 08:49	11/02/22 16:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*11/02/22 08:49*	*11/02/22 16:10*	*1*
o-Terphenyl	*87*		*70 - 130*	*11/02/22 08:49*	*11/02/22 16:10*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5860**		49.8	mg/Kg			11/02/22 15:55	10

Client Sample ID: PH06B

Lab Sample ID: 890-3339-8
Matrix: Solid
Date Collected: 10/31/22 13:25
Date Received: 10/31/22 15:54
Sample Depth: 8'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.0796**		0.00199	mg/Kg		11/02/22 10:00	11/02/22 14:12	1
Toluene	**0.0146**		0.00199	mg/Kg		11/02/22 10:00	11/02/22 14:12	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/02/22 10:00	11/02/22 14:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/02/22 10:00	11/02/22 14:12	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/02/22 10:00	11/02/22 14:12	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/02/22 10:00	11/02/22 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*11/02/22 10:00*	*11/02/22 14:12*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/02/22 10:00*	*11/02/22 14:12*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0942**		0.00398	mg/Kg			11/02/22 14:43	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/03/22 13:10	1

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH06B

Lab Sample ID: 890-3339-8
Matrix: Solid
Date Collected: 10/31/22 13:25
Date Received: 10/31/22 15:54
Sample Depth: 8'

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		11/02/22 08:49	11/02/22 16:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U *-	49.9		mg/Kg		11/02/22 08:49	11/02/22 16:32	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/02/22 08:49	11/02/22 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*74*		*70 - 130*	*11/02/22 08:49*	*11/02/22 16:32*	*1*
o-Terphenyl	*76*		*70 - 130*	*11/02/22 08:49*	*11/02/22 16:32*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10300**		99.0		mg/Kg			11/02/22 16:00	20

Client Sample ID: PH06C

Lab Sample ID: 890-3339-9
Matrix: Solid
Date Collected: 10/31/22 13:50
Date Received: 10/31/22 15:54
Sample Depth: 18'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00464**		0.00199		mg/Kg		11/02/22 11:00	11/02/22 14:32	1
Toluene	**0.00352**		0.00199		mg/Kg		11/02/22 11:00	11/02/22 14:32	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/02/22 11:00	11/02/22 14:32	1
m-Xylene & p-Xylene	**0.00403**		0.00398		mg/Kg		11/02/22 11:00	11/02/22 14:32	1
o-Xylene	**0.00271**		0.00199		mg/Kg		11/02/22 11:00	11/02/22 14:32	1
Xylenes, Total	**0.00674**		0.00398		mg/Kg		11/02/22 11:00	11/02/22 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*11/02/22 11:00*	*11/02/22 14:32*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*11/02/22 11:00*	*11/02/22 14:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0149**		0.00398		mg/Kg			11/02/22 15:00	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/03/22 13:10	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		11/02/22 08:49	11/02/22 16:54	1
Diesel Range Organics (Over C10-C28)	<50.0	U *-	50.0		mg/Kg		11/02/22 08:49	11/02/22 16:54	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/02/22 08:49	11/02/22 16:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*11/02/22 08:49*	*11/02/22 16:54*	*1*
o-Terphenyl	*74*		*70 - 130*	*11/02/22 08:49*	*11/02/22 16:54*	*1*

Client Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH06C

Date Collected: 10/31/22 13:50
Date Received: 10/31/22 15:54
Sample Depth: 18'

Lab Sample ID: 890-3339-9

Matrix: Solid

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5660		49.5		mg/Kg			11/02/22 16:05	10

Surrogate Summary

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3319-A-1-F MS	Matrix Spike	94	106
890-3319-A-1-G MSD	Matrix Spike Duplicate	99	108
890-3339-1	PH04A	100	97
890-3339-2	PH04B	101	99
890-3339-3	PH04C	103	101
890-3339-4	PH05A	97	97
890-3339-5	PH05B	96	90
890-3339-6	PH05C	98	98
890-3339-7	PH06A	101	100
890-3339-8	PH06B	100	107
890-3339-9	PH06C	116	115
LCS 880-38415/1-A	Lab Control Sample	91	105
LCSD 880-38415/2-A	Lab Control Sample Dup	93	110
MB 880-38415/5-A	Method Blank	85	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)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-21004-A-1-C MS	Matrix Spike	78	65 S1-
880-21004-A-1-D MSD	Matrix Spike Duplicate	69 S1-	56 S1-
890-3339-1	PH04A	72	72
890-3339-2	PH04B	82	80
890-3339-3	PH04C	76	77
890-3339-4	PH05A	87	83
890-3339-5	PH05B	73	74
890-3339-6	PH05C	74	73
890-3339-7	PH06A	89	87
890-3339-8	PH06B	74	76
890-3339-9	PH06C	75	74
LCS 880-38447/2-A	Lab Control Sample	75	75
LCSD 880-38447/3-A	Lab Control Sample Dup	84	85
MB 880-38447/1-A	Method Blank	75	75

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38415/5-A
Matrix: Solid
Analysis Batch: 38442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38415

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/01/22 15:07	11/02/22 10:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/01/22 15:07	11/02/22 10:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/01/22 15:07	11/02/22 10:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/01/22 15:07	11/02/22 10:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/01/22 15:07	11/02/22 10:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/01/22 15:07	11/02/22 10:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*11/01/22 15:07*	*11/02/22 10:53*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*11/01/22 15:07*	*11/02/22 10:53*	*1*

Lab Sample ID: LCS 880-38415/1-A
Matrix: Solid
Analysis Batch: 38442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38415

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1004		mg/Kg		100	70 - 130		
Toluene			0.100	0.08754		mg/Kg		88	70 - 130		
Ethylbenzene			0.100	0.08210		mg/Kg		82	70 - 130		
m-Xylene & p-Xylene			0.200	0.1676		mg/Kg		84	70 - 130		
o-Xylene			0.100	0.08632		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 880-38415/2-A
Matrix: Solid
Analysis Batch: 38442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38415

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1038		mg/Kg		104	70 - 130	3	35
Toluene			0.100	0.08958		mg/Kg		90	70 - 130	2	35
Ethylbenzene			0.100	0.08377		mg/Kg		84	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.1698		mg/Kg		85	70 - 130	1	35
o-Xylene			0.100	0.08507		mg/Kg		85	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-3319-A-1-F MS
Matrix: Solid
Analysis Batch: 38442

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38415

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U	0.0998	0.09552		mg/Kg		96	70 - 130		
Toluene	<0.00202	U	0.0998	0.08259		mg/Kg		82	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

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

Lab Sample ID: 890-3319-A-1-F MS
Matrix: Solid
Analysis Batch: 38442

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38415

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U	0.0998	0.07590		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.200	0.1548		mg/Kg		78	70 - 130
o-Xylene	<0.00202	U	0.0998	0.07740		mg/Kg		78	70 - 130

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

Lab Sample ID: 890-3319-A-1-G MSD
Matrix: Solid
Analysis Batch: 38442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38415

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0990	0.09441		mg/Kg		95	70 - 130	1	35
Toluene	<0.00202	U	0.0990	0.07862		mg/Kg		79	70 - 130	5	35
Ethylbenzene	<0.00202	U	0.0990	0.07386		mg/Kg		75	70 - 130	3	35
m-Xylene & p-Xylene	<0.00403	U	0.198	0.1485		mg/Kg		75	70 - 130	4	35
o-Xylene	<0.00202	U	0.0990	0.07377		mg/Kg		75	70 - 130	5	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

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

Lab Sample ID: MB 880-38447/1-A
Matrix: Solid
Analysis Batch: 38456

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38447

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		11/02/22 08:49	11/02/22 09:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/02/22 08:49	11/02/22 09:58	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/02/22 08:49	11/02/22 09:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*11/02/22 08:49*	*11/02/22 09:58*	*1*
o-Terphenyl	*75*		*70 - 130*	*11/02/22 08:49*	*11/02/22 09:58*	*1*

Lab Sample ID: LCS 880-38447/2-A
Matrix: Solid
Analysis Batch: 38456

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38447

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	661.5	*-	mg/Kg		66	70 - 130
Diesel Range Organics (Over C10-C28)			1000	663.7	*-	mg/Kg		66	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

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

Lab Sample ID: LCS 880-38447/2-A
Matrix: Solid
Analysis Batch: 38456

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38447

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	75		70 - 130
o-Terphenyl	75		70 - 130

Lab Sample ID: LCSD 880-38447/3-A
Matrix: Solid
Analysis Batch: 38456

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38447

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	717.0		mg/Kg		72	70 - 130	8	20
Diesel Range Organics (Over C10-C28)			1000	732.8		mg/Kg		73	70 - 130	10	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 880-21004-A-1-C MS
Matrix: Solid
Analysis Batch: 38456

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38447

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *- F1	997	738.2		mg/Kg		74	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *- F1	997	730.4		mg/Kg		73	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	78		70 - 130
o-Terphenyl	65	S1-	70 - 130

Lab Sample ID: 880-21004-A-1-D MSD
Matrix: Solid
Analysis Batch: 38456

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *- F1	999	685.3	F1	mg/Kg		69	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<50.0	U *- F1	999	631.8	F1	mg/Kg		63	70 - 130	14	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	69	S1-	70 - 130
o-Terphenyl	56	S1-	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38445/1-A
Matrix: Solid
Analysis Batch: 38533

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			11/02/22 14:50	1

Lab Sample ID: LCS 880-38445/2-A
Matrix: Solid
Analysis Batch: 38533

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	257.8		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-38445/3-A
Matrix: Solid
Analysis Batch: 38533

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	257.2		mg/Kg		103	90 - 110	0	20

Lab Sample ID: 890-3339-1 MS
Matrix: Solid
Analysis Batch: 38533

Client Sample ID: PH04A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	12300	F1	5000	18240	F1	mg/Kg		119	90 - 110		

Lab Sample ID: 890-3339-1 MSD
Matrix: Solid
Analysis Batch: 38533

Client Sample ID: PH04A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	12300	F1	5000	18050	F1	mg/Kg		115	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

GC VOA

Prep Batch: 38415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Total/NA	Solid	5035	
890-3339-2	PH04B	Total/NA	Solid	5035	
890-3339-3	PH04C	Total/NA	Solid	5035	
890-3339-4	PH05A	Total/NA	Solid	5035	
890-3339-5	PH05B	Total/NA	Solid	5035	
890-3339-6	PH05C	Total/NA	Solid	5035	
890-3339-7	PH06A	Total/NA	Solid	5035	
890-3339-8	PH06B	Total/NA	Solid	5035	
890-3339-9	PH06C	Total/NA	Solid	5035	
MB 880-38415/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38415/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38415/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3319-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-3319-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 38442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Total/NA	Solid	8021B	38415
890-3339-2	PH04B	Total/NA	Solid	8021B	38415
890-3339-3	PH04C	Total/NA	Solid	8021B	38415
890-3339-4	PH05A	Total/NA	Solid	8021B	38415
890-3339-5	PH05B	Total/NA	Solid	8021B	38415
890-3339-6	PH05C	Total/NA	Solid	8021B	38415
890-3339-7	PH06A	Total/NA	Solid	8021B	38415
890-3339-8	PH06B	Total/NA	Solid	8021B	38415
890-3339-9	PH06C	Total/NA	Solid	8021B	38415
MB 880-38415/5-A	Method Blank	Total/NA	Solid	8021B	38415
LCS 880-38415/1-A	Lab Control Sample	Total/NA	Solid	8021B	38415
LCSD 880-38415/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38415
890-3319-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	38415
890-3319-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38415

Analysis Batch: 38518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Total/NA	Solid	Total BTEX	
890-3339-2	PH04B	Total/NA	Solid	Total BTEX	
890-3339-3	PH04C	Total/NA	Solid	Total BTEX	
890-3339-4	PH05A	Total/NA	Solid	Total BTEX	
890-3339-5	PH05B	Total/NA	Solid	Total BTEX	
890-3339-6	PH05C	Total/NA	Solid	Total BTEX	
890-3339-7	PH06A	Total/NA	Solid	Total BTEX	
890-3339-8	PH06B	Total/NA	Solid	Total BTEX	
890-3339-9	PH06C	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 38447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Total/NA	Solid	8015NM Prep	
890-3339-2	PH04B	Total/NA	Solid	8015NM Prep	
890-3339-3	PH04C	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

GC Semi VOA (Continued)

Prep Batch: 38447 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-4	PH05A	Total/NA	Solid	8015NM Prep	
890-3339-5	PH05B	Total/NA	Solid	8015NM Prep	
890-3339-6	PH05C	Total/NA	Solid	8015NM Prep	
890-3339-7	PH06A	Total/NA	Solid	8015NM Prep	
890-3339-8	PH06B	Total/NA	Solid	8015NM Prep	
890-3339-9	PH06C	Total/NA	Solid	8015NM Prep	
MB 880-38447/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38447/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21004-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21004-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Total/NA	Solid	8015B NM	38447
890-3339-2	PH04B	Total/NA	Solid	8015B NM	38447
890-3339-3	PH04C	Total/NA	Solid	8015B NM	38447
890-3339-4	PH05A	Total/NA	Solid	8015B NM	38447
890-3339-5	PH05B	Total/NA	Solid	8015B NM	38447
890-3339-6	PH05C	Total/NA	Solid	8015B NM	38447
890-3339-7	PH06A	Total/NA	Solid	8015B NM	38447
890-3339-8	PH06B	Total/NA	Solid	8015B NM	38447
890-3339-9	PH06C	Total/NA	Solid	8015B NM	38447
MB 880-38447/1-A	Method Blank	Total/NA	Solid	8015B NM	38447
LCS 880-38447/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38447
LCSD 880-38447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38447
880-21004-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38447
880-21004-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38447

Analysis Batch: 38633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Total/NA	Solid	8015 NM	
890-3339-2	PH04B	Total/NA	Solid	8015 NM	
890-3339-3	PH04C	Total/NA	Solid	8015 NM	
890-3339-4	PH05A	Total/NA	Solid	8015 NM	
890-3339-5	PH05B	Total/NA	Solid	8015 NM	
890-3339-6	PH05C	Total/NA	Solid	8015 NM	
890-3339-7	PH06A	Total/NA	Solid	8015 NM	
890-3339-8	PH06B	Total/NA	Solid	8015 NM	
890-3339-9	PH06C	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 38445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Soluble	Solid	DI Leach	
890-3339-2	PH04B	Soluble	Solid	DI Leach	
890-3339-3	PH04C	Soluble	Solid	DI Leach	
890-3339-4	PH05A	Soluble	Solid	DI Leach	
890-3339-5	PH05B	Soluble	Solid	DI Leach	
890-3339-6	PH05C	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

HPLC/IC (Continued)

Leach Batch: 38445 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-7	PH06A	Soluble	Solid	DI Leach	
890-3339-8	PH06B	Soluble	Solid	DI Leach	
890-3339-9	PH06C	Soluble	Solid	DI Leach	
MB 880-38445/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38445/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38445/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3339-1 MS	PH04A	Soluble	Solid	DI Leach	
890-3339-1 MSD	PH04A	Soluble	Solid	DI Leach	

Analysis Batch: 38533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3339-1	PH04A	Soluble	Solid	300.0	38445
890-3339-2	PH04B	Soluble	Solid	300.0	38445
890-3339-3	PH04C	Soluble	Solid	300.0	38445
890-3339-4	PH05A	Soluble	Solid	300.0	38445
890-3339-5	PH05B	Soluble	Solid	300.0	38445
890-3339-6	PH05C	Soluble	Solid	300.0	38445
890-3339-7	PH06A	Soluble	Solid	300.0	38445
890-3339-8	PH06B	Soluble	Solid	300.0	38445
890-3339-9	PH06C	Soluble	Solid	300.0	38445
MB 880-38445/1-A	Method Blank	Soluble	Solid	300.0	38445
LCS 880-38445/2-A	Lab Control Sample	Soluble	Solid	300.0	38445
LCSD 880-38445/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38445
890-3339-1 MS	PH04A	Soluble	Solid	300.0	38445
890-3339-1 MSD	PH04A	Soluble	Solid	300.0	38445

Lab Chronicle

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH04A
Date Collected: 10/31/22 09:45
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-1
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			5.01 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 11:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 13:59	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		20			38533	11/02/22 15:05	CH	EET MID

Client Sample ID: PH04B
Date Collected: 10/31/22 10:00
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-2
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	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 12:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 14:21	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		10			38533	11/02/22 15:20	CH	EET MID

Client Sample ID: PH04C
Date Collected: 10/31/22 10:50
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-3
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			4.95 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 12:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 14:43	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		20			38533	11/02/22 15:25	CH	EET MID

Client Sample ID: PH05A
Date Collected: 10/31/22 12:25
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 12:50	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH05A
Date Collected: 10/31/22 12:25
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-4
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			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 15:04	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		1			38533	11/02/22 15:30	CH	EET MID

Client Sample ID: PH05B
Date Collected: 10/31/22 12:45
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 13:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 15:26	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		1			38533	11/02/22 15:35	CH	EET MID

Client Sample ID: PH05C
Date Collected: 10/31/22 12:50
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 13:31	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 15:48	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		1			38533	11/02/22 15:50	CH	EET MID

Client Sample ID: PH06A
Date Collected: 10/31/22 13:15
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-7
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			4.99 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 13:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 16:10	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Client Sample ID: PH06A

Date Collected: 10/31/22 13:15
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		10			38533	11/02/22 15:55	CH	EET MID

Client Sample ID: PH06B

Date Collected: 10/31/22 13:25
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	38415	11/02/22 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 14:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 14:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 16:32	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		20			38533	11/02/22 16:00	CH	EET MID

Client Sample ID: PH06C

Date Collected: 10/31/22 13:50
Date Received: 10/31/22 15:54

Lab Sample ID: 890-3339-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	38415	11/02/22 11:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38442	11/02/22 14:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38518	11/02/22 15:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			38633	11/03/22 13:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38447	11/02/22 08:49	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38456	11/02/22 16:54	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	38445	11/02/22 08:07	CH	EET MID
Soluble	Analysis	300.0		10			38533	11/02/22 16:05	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: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

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

Method Summary

Client: Ensolum
Project/Site: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

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: MCA145

Job ID: 890-3339-1
SDG: 03D2057027

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3339-1	PH04A	Solid	10/31/22 09:45	10/31/22 15:54	3'
890-3339-2	PH04B	Solid	10/31/22 10:00	10/31/22 15:54	8'
890-3339-3	PH04C	Solid	10/31/22 10:50	10/31/22 15:54	18'
890-3339-4	PH05A	Solid	10/31/22 12:25	10/31/22 15:54	2'
890-3339-5	PH05B	Solid	10/31/22 12:45	10/31/22 15:54	6'
890-3339-6	PH05C	Solid	10/31/22 12:50	10/31/22 15:54	8'
890-3339-7	PH06A	Solid	10/31/22 13:15	10/31/22 15:54	2'
890-3339-8	PH06B	Solid	10/31/22 13:25	10/31/22 15:54	8'
890-3339-9	PH06C	Solid	10/31/22 13:50	10/31/22 15:54	18'

eurofins | 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:	Kalei Jennings	Bill to: (if different)	a.a.
Company Name:	Ensolum, LLC	Company Name:	
Address:	3122 Nat'l Parks Hwy	Address:	
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	
Phone:	817-683-2503	Email:	BJennings@ensolum.com

Work Order Comments

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

Project Name:	MCA 145	Turn Around	
Project Number:	03D2057027	☐ Routine ☑ Rush	
Project Location:	32.507382, -103.748677	Due Date:	24 hr.
Sampler's Name:	Julianna Falcomata	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:	TAM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.6
Total Containers:		Corrected Temperature:	3.4

ANALYSIS REQUEST

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2SO_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	TPH	BTX	Cl	Sample Comments
PH04A	S	10-31-22	0945	3'	G	1	✓	✓	✓	
PH04B	S	10-31-22	1000	8'	G	1	✓	✓	✓	
PH04C	S	10-31-22	1050	18'	G	1	✓	✓	✓	
PH05A	S	10-31-22	1225	2'	G	1	✓	✓	✓	
PH05B	S	10-31-22	1245	6'	G	1	✓	✓	✓	
PH05C	S	10-31-22	1250	8'	G	1	✓	✓	✓	
PH06A	S	10-31-22	1315	2'	G	1	✓	✓	✓	
PH06B	S	10-31-22	1325	8'	G	1	✓	✓	✓	
PH06C	S	10-31-22	1350	18'	G	1	✓	✓	✓	

890-3339 Chain of Custody

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Amanda Stiff	10/31/22 15:54			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3339-1
SDG Number: 03D2057027

Login Number: 3339
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: 890-3339-1
SDG Number: 03D2057027

Login Number: 3339
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 11/02/22 01:09 PM

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	

eurofins | Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3396-1
Laboratory Sample Delivery Group: 03D2057027
Client Project/Site: MCA 145

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
11/9/2022 4:48:17 PM

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

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

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

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

Client: Ensolum
Project/Site: MCA 145

Laboratory Job ID: 890-3396-1
SDG: 03D2057027

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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 145

Job ID: 890-3396-1
SDG: 03D2057027

Job ID: 890-3396-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3396-1

Receipt
The samples were received on 11/4/2022 1:10 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 3.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3396-1), PH01 (890-3396-2) and PH01 (890-3396-3).

The following samples were received outside of holding time for TPH and BTEX: PH01 (890-3396-1), PH01 (890-3396-2) and PH01 (890-3396-3).

GC VOA
Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-38877 and analytical batch 880-38808 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The following samples were received outside of holding time: PH01 (890-3396-1), PH01 (890-3396-2) and PH01 (890-3396-3).

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 following samples were received outside of holding time: PH01 (890-3396-1), PH01 (890-3396-2) and PH01 (890-3396-3).

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 145

Job ID: 890-3396-1
SDG: 03D2057027

Client Sample ID: PH01

Lab Sample ID: 890-3396-1
Matrix: Solid
Date Collected: 10/21/22 10:30
Date Received: 11/04/22 13:10
Sample Depth: 1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 03:55	1
Toluene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 03:55	1
Ethylbenzene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 03:55	1
m-Xylene & p-Xylene	<0.00402	U H	0.00402		mg/Kg		11/07/22 12:36	11/08/22 03:55	1
o-Xylene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 03:55	1
Xylenes, Total	<0.00402	U H	0.00402		mg/Kg		11/07/22 12:36	11/08/22 03:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*11/07/22 12:36*	*11/08/22 03:55*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*11/07/22 12:36*	*11/08/22 03:55*	*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			11/08/22 13:53	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/08/22 11:48	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 H	50.0		mg/Kg		11/07/22 09:04	11/07/22 17:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U H	50.0		mg/Kg		11/07/22 09:04	11/07/22 17:56	1
OII Range Organics (Over C28-C36)	<50.0	U H	50.0		mg/Kg		11/07/22 09:04	11/07/22 17:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*11/07/22 09:04*	*11/07/22 17:56*	*1*
o-Terphenyl	*88*		*70 - 130*	*11/07/22 09:04*	*11/07/22 17:56*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1940**		25.3		mg/Kg			11/09/22 15:22	5

Client Sample ID: PH01

Lab Sample ID: 890-3396-2
Matrix: Solid
Date Collected: 10/21/22 10:35
Date Received: 11/04/22 13:10
Sample Depth: 10

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 04:15	1
Toluene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 04:15	1
Ethylbenzene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 04:15	1
m-Xylene & p-Xylene	<0.00402	U H	0.00402		mg/Kg		11/07/22 12:36	11/08/22 04:15	1
o-Xylene	<0.00201	U H	0.00201		mg/Kg		11/07/22 12:36	11/08/22 04:15	1
Xylenes, Total	<0.00402	U H	0.00402		mg/Kg		11/07/22 12:36	11/08/22 04:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*11/07/22 12:36*	*11/08/22 04:15*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

Client Sample ID: PH01

Lab Sample ID: 890-3396-2
Matrix: Solid
Date Collected: 10/21/22 10:35
Date Received: 11/04/22 13:10
Sample Depth: 10

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*11/07/22 12:36*	*11/08/22 04:15*	*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			11/08/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/08/22 11:48	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 H	49.9	mg/Kg		11/07/22 09:04	11/07/22 18:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U H	49.9	mg/Kg		11/07/22 09:04	11/07/22 18:18	1
OII Range Organics (Over C28-C36)	<49.9	U H	49.9	mg/Kg		11/07/22 09:04	11/07/22 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*115*		*70 - 130*	*11/07/22 09:04*	*11/07/22 18:18*	*1*
o-Terphenyl	*111*		*70 - 130*	*11/07/22 09:04*	*11/07/22 18:18*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6900**		50.1	mg/Kg			11/09/22 15:37	10

Client Sample ID: PH01

Lab Sample ID: 890-3396-3
Matrix: Solid
Date Collected: 10/21/22 10:40
Date Received: 11/04/22 13:10
Sample Depth: 18

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U H	0.00200	mg/Kg		11/07/22 12:36	11/08/22 04:36	1
Toluene	<0.00200	U H	0.00200	mg/Kg		11/07/22 12:36	11/08/22 04:36	1
Ethylbenzene	<0.00200	U H	0.00200	mg/Kg		11/07/22 12:36	11/08/22 04:36	1
m-Xylene & p-Xylene	<0.00399	U H	0.00399	mg/Kg		11/07/22 12:36	11/08/22 04:36	1
o-Xylene	<0.00200	U H	0.00200	mg/Kg		11/07/22 12:36	11/08/22 04:36	1
Xylenes, Total	<0.00399	U H	0.00399	mg/Kg		11/07/22 12:36	11/08/22 04:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*11/07/22 12:36*	*11/08/22 04:36*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*11/07/22 12:36*	*11/08/22 04:36*	*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			11/08/22 13:53	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/08/22 11:48	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

Client Sample ID: PH01
Date Collected: 10/21/22 10:40
Date Received: 11/04/22 13:10
Sample Depth: 18

Lab Sample ID: 890-3396-3
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 H	49.9		mg/Kg		11/07/22 09:04	11/07/22 18:39	1
Diesel Range Organics (Over C10-C28)	<49.9	U H	49.9		mg/Kg		11/07/22 09:04	11/07/22 18:39	1
OII Range Organics (Over C28-C36)	<49.9	U H	49.9		mg/Kg		11/07/22 09:04	11/07/22 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*11/07/22 09:04*	*11/07/22 18:39*	*1*
o-Terphenyl	*84*		*70 - 130*	*11/07/22 09:04*	*11/07/22 18:39*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3350**		24.9		mg/Kg			11/09/22 15:42	5

Surrogate Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-21188-A-1-H MS	Matrix Spike	97	89
880-21188-A-1-I MSD	Matrix Spike Duplicate	117	129
890-3396-1	PH01	101	89
890-3396-2	PH01	106	88
890-3396-3	PH01	105	84
LCS 880-38877/1-A	Lab Control Sample	100	109
LCSD 880-38877/2-A	Lab Control Sample Dup	97	104
MB 880-38814/5-A	Method Blank	83	96
MB 880-38877/5-A	Method Blank	86	93

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-21167-A-1-D MS	Matrix Spike	97	77
880-21167-A-1-E MSD	Matrix Spike Duplicate	81	74
890-3396-1	PH01	91	88
890-3396-2	PH01	115	111
890-3396-3	PH01	88	84
LCS 880-38817/2-A	Lab Control Sample	100	97
LCSD 880-38817/3-A	Lab Control Sample Dup	100	100
MB 880-38817/1-A	Method Blank	99	102

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38814/5-A
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38814

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/07/22 08:53	11/07/22 10:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/07/22 08:53	11/07/22 10:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/07/22 08:53	11/07/22 10:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/07/22 08:53	11/07/22 10:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/07/22 08:53	11/07/22 10:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/07/22 08:53	11/07/22 10:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*	*11/07/22 08:53*	*11/07/22 10:50*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*11/07/22 08:53*	*11/07/22 10:50*	*1*

Lab Sample ID: MB 880-38877/5-A
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38877

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/07/22 12:36	11/07/22 21:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/07/22 12:36	11/07/22 21:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/07/22 12:36	11/07/22 21:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/07/22 12:36	11/07/22 21:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/07/22 12:36	11/07/22 21:25	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/07/22 12:36	11/07/22 21:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*11/07/22 12:36*	*11/07/22 21:25*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*11/07/22 12:36*	*11/07/22 21:25*	*1*

Lab Sample ID: LCS 880-38877/1-A
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38877

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09773		mg/Kg		98	70 - 130		
Toluene			0.100	0.08315		mg/Kg		83	70 - 130		
Ethylbenzene			0.100	0.08116		mg/Kg		81	70 - 130		
m-Xylene & p-Xylene			0.200	0.1641		mg/Kg		82	70 - 130		
o-Xylene			0.100	0.08211		mg/Kg		82	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*

Lab Sample ID: LCSD 880-38877/2-A
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38877

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09422		mg/Kg		94	70 - 130	4	35

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

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

Lab Sample ID: LCSD 880-38877/2-A
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38877

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.08135		mg/Kg		81	70 - 130	2	35
Ethylbenzene			0.100	0.07785		mg/Kg		78	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.1583		mg/Kg		79	70 - 130	4	35
o-Xylene			0.100	0.07923		mg/Kg		79	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-21188-A-1-H MS
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38877

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.0998	0.06942		mg/Kg		70	70 - 130
Toluene	<0.00200	U F1	0.0998	0.07384		mg/Kg		73	70 - 130
Ethylbenzene	<0.00200	U F1	0.0998	0.08236		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1494		mg/Kg		75	70 - 130
o-Xylene	<0.00200	U	0.0998	0.07315		mg/Kg		73	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: 880-21188-A-1-I MSD
Matrix: Solid
Analysis Batch: 38808

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38877

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0990	0.06753	F1	mg/Kg		68	70 - 130	3	35
Toluene	<0.00200	U F1	0.0990	0.06338	F1	mg/Kg		64	70 - 130	15	35
Ethylbenzene	<0.00200	U F1	0.0990	0.06831	F1	mg/Kg		69	70 - 130	19	35
m-Xylene & p-Xylene	<0.00401	U	0.198	0.1388		mg/Kg		70	70 - 130	7	35
o-Xylene	<0.00200	U	0.0990	0.07072		mg/Kg		71	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*129*		*70 - 130*

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

Lab Sample ID: MB 880-38817/1-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38817

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		11/07/22 08:44	11/07/22 08:46	1

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

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

Lab Sample ID: MB 880-38817/1-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38817

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/07/22 08:44	11/07/22 08:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/07/22 08:44	11/07/22 08:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*11/07/22 08:44*	*11/07/22 08:46*	*1*
o-Terphenyl	*102*		*70 - 130*	*11/07/22 08:44*	*11/07/22 08:46*	*1*

Lab Sample ID: LCS 880-38817/2-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38817

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	815.6		mg/Kg		82	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	952.9		mg/Kg		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*100*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: LCSD 880-38817/3-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38817

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	787.9		mg/Kg		79	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	973.0		mg/Kg		97	70 - 130	2	20

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

Lab Sample ID: 880-21167-A-1-D MS
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38817

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	868.4		mg/Kg		85	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	997	916.7		mg/Kg		92	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*77*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

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

Lab Sample ID: 880-21167-A-1-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38798 — **Prep Batch: 38817**

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	895.3		mg/Kg		88	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	900.5		mg/Kg		90	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*81*		*70 - 130*
o-Terphenyl	*74*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38820/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 39046

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			11/09/22 14:38	1

Lab Sample ID: LCS 880-38820/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 39046

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	266.6		mg/Kg		107	90 - 110		

Lab Sample ID: LCSD 880-38820/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 39046

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	267.4		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 880-21183-A-12-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 39046

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	10400		5000	15790		mg/Kg		108	90 - 110		

Lab Sample ID: 880-21183-A-12-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 39046

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	10400		5000	15780		mg/Kg		108	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

GC VOA

Analysis Batch: 38808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Total/NA	Solid	8021B	38877
890-3396-2	PH01	Total/NA	Solid	8021B	38877
890-3396-3	PH01	Total/NA	Solid	8021B	38877
MB 880-38814/5-A	Method Blank	Total/NA	Solid	8021B	38814
MB 880-38877/5-A	Method Blank	Total/NA	Solid	8021B	38877
LCS 880-38877/1-A	Lab Control Sample	Total/NA	Solid	8021B	38877
LCSD 880-38877/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38877
880-21188-A-1-H MS	Matrix Spike	Total/NA	Solid	8021B	38877
880-21188-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38877

Prep Batch: 38814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38814/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 38877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Total/NA	Solid	5035	
890-3396-2	PH01	Total/NA	Solid	5035	
890-3396-3	PH01	Total/NA	Solid	5035	
MB 880-38877/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38877/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38877/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-21188-A-1-H MS	Matrix Spike	Total/NA	Solid	5035	
880-21188-A-1-I MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 39011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Total/NA	Solid	Total BTEX	
890-3396-2	PH01	Total/NA	Solid	Total BTEX	
890-3396-3	PH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Total/NA	Solid	8015B NM	38817
890-3396-2	PH01	Total/NA	Solid	8015B NM	38817
890-3396-3	PH01	Total/NA	Solid	8015B NM	38817
MB 880-38817/1-A	Method Blank	Total/NA	Solid	8015B NM	38817
LCS 880-38817/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38817
LCSD 880-38817/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38817
880-21167-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	38817
880-21167-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38817

Prep Batch: 38817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Total/NA	Solid	8015NM Prep	
890-3396-2	PH01	Total/NA	Solid	8015NM Prep	
890-3396-3	PH01	Total/NA	Solid	8015NM Prep	
MB 880-38817/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38817/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

GC Semi VOA (Continued)

Prep Batch: 38817 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-38817/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21167-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21167-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Total/NA	Solid	8015 NM	
890-3396-2	PH01	Total/NA	Solid	8015 NM	
890-3396-3	PH01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 38820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Soluble	Solid	DI Leach	
890-3396-2	PH01	Soluble	Solid	DI Leach	
890-3396-3	PH01	Soluble	Solid	DI Leach	
MB 880-38820/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38820/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38820/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-21183-A-12-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-21183-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 39046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3396-1	PH01	Soluble	Solid	300.0	38820
890-3396-2	PH01	Soluble	Solid	300.0	38820
890-3396-3	PH01	Soluble	Solid	300.0	38820
MB 880-38820/1-A	Method Blank	Soluble	Solid	300.0	38820
LCS 880-38820/2-A	Lab Control Sample	Soluble	Solid	300.0	38820
LCSD 880-38820/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38820
880-21183-A-12-B MS	Matrix Spike	Soluble	Solid	300.0	38820
880-21183-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38820

Lab Chronicle

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

Client Sample ID: PH01
Date Collected: 10/21/22 10:30
Date Received: 11/04/22 13:10

Lab Sample ID: 890-3396-1
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	38877	11/07/22 12:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38808	11/08/22 03:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39011	11/08/22 13:53	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38989	11/08/22 11:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38817	11/07/22 09:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38798	11/07/22 17:56	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	38820	11/07/22 09:28	CH	EET MID
Soluble	Analysis	300.0		5			39046	11/09/22 15:22	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/21/22 10:35
Date Received: 11/04/22 13:10

Lab Sample ID: 890-3396-2
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			4.98 g	5 mL	38877	11/07/22 12:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38808	11/08/22 04:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39011	11/08/22 13:53	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38989	11/08/22 11:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	38817	11/07/22 09:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38798	11/07/22 18:18	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	38820	11/07/22 09:28	CH	EET MID
Soluble	Analysis	300.0		10			39046	11/09/22 15:37	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/21/22 10:40
Date Received: 11/04/22 13:10

Lab Sample ID: 890-3396-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	38877	11/07/22 12:36	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38808	11/08/22 04:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39011	11/08/22 13:53	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38989	11/08/22 11:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	38817	11/07/22 09:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38798	11/07/22 18:39	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	38820	11/07/22 09:28	CH	EET MID
Soluble	Analysis	300.0		5			39046	11/09/22 15:42	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 145

Job ID: 890-3396-1
SDG: 03D2057027

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

Method Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3396-1
SDG: 03D2057027

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 145

Job ID: 890-3396-1
SDG: 03D2057027

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3396-1	PH01	Solid	10/21/22 10:30	11/04/22 13:10	1
890-3396-2	PH01	Solid	10/21/22 10:35	11/04/22 13:10	10
890-3396-3	PH01	Solid	10/21/22 10:40	11/04/22 13:10	18

eurofins | 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:	Kalei Jennings	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	601 N Marienfeld St Suite 400	Address:	601 N Marienfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:	817-683-2503	Email:	kiennings@ensolum.com, hgreen@ensolum.com

Work Order Comments

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

Project Name:	MCA 145	Turn Around	
Project Number:	03D2057027	☑ Routine ☐ Rush	
Project Location:	32.805570,-103.748544	Due Date:	
Sampler's Name:	Conner 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:	NM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.0
Total Containers:		Corrected Temperature:	3.8

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH01	s	10/21/2022	1030	1'	g	1		x	x	x
PH01	s	10/21/2022	1035	10'	g	1		x	x	x
PH01	s	10/21/2022	1040	18'	g	1		x	x	x

Parameters

890-3396 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		11-4-22 1310	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220
Phone. 575-988-3199 Fax 575-988-3199

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Kramer Jessica	Carrier Tracking No(s)	COC No: 890-1011 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jessica Kramer@et.eurofinsus com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-3396-1
Address: 1211 W Florida Ave	Due Date Requested: 11/10/2022			
City: Midland	TAT Requested (days):			
State Zip: TX 79701				
Phone: 432-704-5440(Tel)	PO #:			
Email	WO #:			
Project Name: MCA 145	Project #: 89000094			
Site	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O - AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH	8015MOD_Calc	300_ORGFM_28D/DI_LEACH Chloride	8021B/5035FP_Calc (MOD) BTEX	Total_BTEX_GCV	Total Number of containers	Special Instructions/Note
			Preservation Code:										
PH01 (890-3396-1)	10/21/22	10 30 Mountain		Solid			X	X	X	X	X	1	
PH01 (890-3396-2)	10/21/22	10 35 Mountain		Solid			X	X	X	X	X	1	
PH01 (890-3396-3)	10/21/22	10 40 Mountain		Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3396-1
SDG Number: 03D2057027

Login Number: 3396
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: 890-3396-1
SDG Number: 03D2057027

Login Number: 3396
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 11/07/22 09:10 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	

eurofins | Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3397-1
Laboratory Sample Delivery Group: 03D2057027
Client Project/Site: MCA 145

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
11/9/2022 4:48:17 PM

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

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

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

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

Client: Ensolum
Project/Site: MCA 145

Laboratory Job ID: 890-3397-1
SDG: 03D2057027

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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 145

Job ID: 890-3397-1
SDG: 03D2057027

Job ID: 890-3397-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3397-1

Receipt
The samples were received on 11/4/2022 1:10 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 3.8°C

Receipt Exceptions
The following samples were received outside of holding time for TPH and BTEX: PH02 (890-3397-1) and PH02 (890-3397-2).

The following samples were received and analyzed from an unpreserved bulk soil jar: PH02 (890-3397-1) and PH02 (890-3397-2).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38855 and analytical batch 880-38810 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: The following samples were received outside of holding time: PH02 (890-3397-1) and PH02 (890-3397-2).

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 following samples were received outside of holding time: PH02 (890-3397-1) and PH02 (890-3397-2).

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 145

Job ID: 890-3397-1
SDG: 03D2057027

Client Sample ID: PH02

Date Collected: 10/21/22 12:35
Date Received: 11/04/22 13:10
Sample Depth: 1

Lab Sample ID: 890-3397-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U H	0.00198		mg/Kg		11/07/22 11:02	11/07/22 22:44	1
Toluene	<0.00198	U H	0.00198		mg/Kg		11/07/22 11:02	11/07/22 22:44	1
Ethylbenzene	<0.00198	U H	0.00198		mg/Kg		11/07/22 11:02	11/07/22 22:44	1
m-Xylene & p-Xylene	<0.00396	U H	0.00396		mg/Kg		11/07/22 11:02	11/07/22 22:44	1
o-Xylene	<0.00198	U H	0.00198		mg/Kg		11/07/22 11:02	11/07/22 22:44	1
Xylenes, Total	<0.00396	U H	0.00396		mg/Kg		11/07/22 11:02	11/07/22 22:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*11/07/22 11:02*	*11/07/22 22:44*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*11/07/22 11:02*	*11/07/22 22:44*	*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			11/08/22 13:40	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/08/22 11:48	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 H	50.0		mg/Kg		11/07/22 09:04	11/07/22 19:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U H	50.0		mg/Kg		11/07/22 09:04	11/07/22 19:01	1
OII Range Organics (Over C28-C36)	<50.0	U H	50.0		mg/Kg		11/07/22 09:04	11/07/22 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/07/22 09:04*	*11/07/22 19:01*	*1*
o-Terphenyl	*92*		*70 - 130*	*11/07/22 09:04*	*11/07/22 19:01*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4550**		49.9		mg/Kg			11/09/22 15:47	10

Client Sample ID: PH02

Date Collected: 10/21/22 12:40
Date Received: 11/04/22 13:10
Sample Depth: 4

Lab Sample ID: 890-3397-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U H	0.00202		mg/Kg		11/07/22 11:02	11/07/22 23:05	1
Toluene	**0.00412**	**H**	0.00202		mg/Kg		11/07/22 11:02	11/07/22 23:05	1
Ethylbenzene	<0.00202	U H	0.00202		mg/Kg		11/07/22 11:02	11/07/22 23:05	1
m-Xylene & p-Xylene	<0.00403	U H	0.00403		mg/Kg		11/07/22 11:02	11/07/22 23:05	1
o-Xylene	**0.00215**	**H**	0.00202		mg/Kg		11/07/22 11:02	11/07/22 23:05	1
Xylenes, Total	<0.00403	U H	0.00403		mg/Kg		11/07/22 11:02	11/07/22 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*11/07/22 11:02*	*11/07/22 23:05*	*1*

Client Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

Client Sample ID: PH02

Date Collected: 10/21/22 12:40
Date Received: 11/04/22 13:10
Sample Depth: 4

Lab Sample ID: 890-3397-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/07/22 11:02*	*11/07/22 23:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00627**		0.00403	mg/Kg			11/08/22 13:40	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/08/22 11:48	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 H	50.0	mg/Kg		11/07/22 09:04	11/07/22 19:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U H	50.0	mg/Kg		11/07/22 09:04	11/07/22 19:23	1
OII Range Organics (Over C28-C36)	<50.0	U H	50.0	mg/Kg		11/07/22 09:04	11/07/22 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/07/22 09:04*	*11/07/22 19:23*	*1*
o-Terphenyl	*90*		*70 - 130*	*11/07/22 09:04*	*11/07/22 19:23*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16000**		249	mg/Kg			11/09/22 15:52	50

Surrogate Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-3376-A-1-F MS	Matrix Spike	97	100										
890-3376-A-1-G MSD	Matrix Spike Duplicate	112	95										
890-3397-1	PH02	118	100										
890-3397-2	PH02	114	103										
LCS 880-38855/1-A	Lab Control Sample	108	93										
LCSD 880-38855/2-A	Lab Control Sample Dup	97	99										
MB 880-38855/5-A	Method Blank	84	101										

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)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-21167-A-1-D MS	Matrix Spike	97	77										
880-21167-A-1-E MSD	Matrix Spike Duplicate	81	74										
890-3397-1	PH02	96	92										
890-3397-2	PH02	96	90										
LCS 880-38817/2-A	Lab Control Sample	100	97										
LCSD 880-38817/3-A	Lab Control Sample Dup	100	100										
MB 880-38817/1-A	Method Blank	99	102										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38855/5-A
Matrix: Solid
Analysis Batch: 38810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38855

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/07/22 11:02	11/07/22 14:38	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/07/22 11:02	11/07/22 14:38	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/07/22 11:02	11/07/22 14:38	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/07/22 11:02	11/07/22 14:38	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/07/22 11:02	11/07/22 14:38	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/07/22 11:02	11/07/22 14:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*11/07/22 11:02*	*11/07/22 14:38*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*11/07/22 11:02*	*11/07/22 14:38*	*1*

Lab Sample ID: LCS 880-38855/1-A
Matrix: Solid
Analysis Batch: 38810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38855

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1042		mg/Kg		104	70 - 130		
Toluene			0.100	0.1138		mg/Kg		114	70 - 130		
Ethylbenzene			0.100	0.1111		mg/Kg		111	70 - 130		
m-Xylene & p-Xylene			0.200	0.1994		mg/Kg		100	70 - 130		
o-Xylene			0.100	0.09890		mg/Kg		99	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-38855/2-A
Matrix: Solid
Analysis Batch: 38810

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38855

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09577		mg/Kg		96	70 - 130	8	35
Toluene			0.100	0.1047		mg/Kg		105	70 - 130	8	35
Ethylbenzene			0.100	0.09891		mg/Kg		99	70 - 130	12	35
m-Xylene & p-Xylene			0.200	0.1722		mg/Kg		86	70 - 130	15	35
o-Xylene			0.100	0.08427		mg/Kg		84	70 - 130	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-3376-A-1-F MS
Matrix: Solid
Analysis Batch: 38810

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38855

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00202	U	0.101	0.09235		mg/Kg		91	70 - 130		
Toluene	<0.00202	U	0.101	0.09881		mg/Kg		97	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

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

Lab Sample ID: 890-3376-A-1-F MS
Matrix: Solid
Analysis Batch: 38810

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38855

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.0177	F1	0.101	0.08335	F1	mg/Kg		65	70 - 130
m-Xylene & p-Xylene	0.00451	F1	0.202	0.1199	F1	mg/Kg		57	70 - 130
o-Xylene	0.0143	F1	0.101	0.07681	F1	mg/Kg		62	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 890-3376-A-1-G MSD
Matrix: Solid
Analysis Batch: 38810

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38855

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0994	0.1011		mg/Kg		101	70 - 130	9	35
Toluene	<0.00202	U	0.0994	0.1115		mg/Kg		112	70 - 130	12	35
Ethylbenzene	0.0177	F1	0.0994	0.09824		mg/Kg		81	70 - 130	16	35
m-Xylene & p-Xylene	0.00451	F1	0.199	0.1351	F1	mg/Kg		66	70 - 130	12	35
o-Xylene	0.0143	F1	0.0994	0.08784		mg/Kg		74	70 - 130	13	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

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

Lab Sample ID: MB 880-38817/1-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38817

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		11/07/22 08:44	11/07/22 08:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/07/22 08:44	11/07/22 08:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/07/22 08:44	11/07/22 08:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*11/07/22 08:44*	*11/07/22 08:46*	*1*
o-Terphenyl	*102*		*70 - 130*	*11/07/22 08:44*	*11/07/22 08:46*	*1*

Lab Sample ID: LCS 880-38817/2-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38817

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	815.6		mg/Kg		82	70 - 130
Diesel Range Organics (Over C10-C28)			1000	952.9		mg/Kg		95	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

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

Lab Sample ID: LCS 880-38817/2-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38817

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	100		70 - 130
o-Terphenyl	97		70 - 130

Lab Sample ID: LCSD 880-38817/3-A
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38817

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	787.9		mg/Kg		79	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	973.0		mg/Kg		97	70 - 130	2	20

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

Lab Sample ID: 880-21167-A-1-D MS
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38817

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	997	868.4		mg/Kg		85	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	997	916.7		mg/Kg		92	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	77		70 - 130

Lab Sample ID: 880-21167-A-1-E MSD
Matrix: Solid
Analysis Batch: 38798

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38817

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	895.3		mg/Kg		88	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	900.5		mg/Kg		90	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	81		70 - 130
o-Terphenyl	74		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38820/1-A
Matrix: Solid
Analysis Batch: 39046

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			11/09/22 14:38	1

Lab Sample ID: LCS 880-38820/2-A
Matrix: Solid
Analysis Batch: 39046

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	266.6		mg/Kg		107	90 - 110		

Lab Sample ID: LCSD 880-38820/3-A
Matrix: Solid
Analysis Batch: 39046

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	267.4		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 880-21183-A-12-B MS
Matrix: Solid
Analysis Batch: 39046

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	10400		5000	15790		mg/Kg		108	90 - 110		

Lab Sample ID: 880-21183-A-12-C MSD
Matrix: Solid
Analysis Batch: 39046

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	10400		5000	15780		mg/Kg		108	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

GC VOA

Analysis Batch: 38810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Total/NA	Solid	8021B	38855
890-3397-2	PH02	Total/NA	Solid	8021B	38855
MB 880-38855/5-A	Method Blank	Total/NA	Solid	8021B	38855
LCS 880-38855/1-A	Lab Control Sample	Total/NA	Solid	8021B	38855
LCSD 880-38855/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38855
890-3376-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	38855
890-3376-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38855

Prep Batch: 38855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Total/NA	Solid	5035	
890-3397-2	PH02	Total/NA	Solid	5035	
MB 880-38855/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38855/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38855/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3376-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-3376-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 39005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Total/NA	Solid	Total BTEX	
890-3397-2	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 38798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Total/NA	Solid	8015B NM	38817
890-3397-2	PH02	Total/NA	Solid	8015B NM	38817
MB 880-38817/1-A	Method Blank	Total/NA	Solid	8015B NM	38817
LCS 880-38817/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38817
LCSD 880-38817/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38817
880-21167-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	38817
880-21167-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38817

Prep Batch: 38817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Total/NA	Solid	8015NM Prep	
890-3397-2	PH02	Total/NA	Solid	8015NM Prep	
MB 880-38817/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38817/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38817/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-21167-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-21167-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Total/NA	Solid	8015 NM	
890-3397-2	PH02	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

HPLC/IC

Leach Batch: 38820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Soluble	Solid	DI Leach	
890-3397-2	PH02	Soluble	Solid	DI Leach	
MB 880-38820/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38820/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38820/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-21183-A-12-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-21183-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 39046

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3397-1	PH02	Soluble	Solid	300.0	38820
890-3397-2	PH02	Soluble	Solid	300.0	38820
MB 880-38820/1-A	Method Blank	Soluble	Solid	300.0	38820
LCS 880-38820/2-A	Lab Control Sample	Soluble	Solid	300.0	38820
LCSD 880-38820/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38820
880-21183-A-12-B MS	Matrix Spike	Soluble	Solid	300.0	38820
880-21183-A-12-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38820

Lab Chronicle

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

Client Sample ID: PH02
Date Collected: 10/21/22 12:35
Date Received: 11/04/22 13:10

Lab Sample ID: 890-3397-1
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			5.05 g	5 mL	38855	11/07/22 11:02	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38810	11/07/22 22:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39005	11/08/22 13:40	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38990	11/08/22 11:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	38817	11/07/22 09:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38798	11/07/22 19:01	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38820	11/07/22 09:28	CH	EET MID
Soluble	Analysis	300.0		10			39046	11/09/22 15:47	CH	EET MID

Client Sample ID: PH02
Date Collected: 10/21/22 12:40
Date Received: 11/04/22 13:10

Lab Sample ID: 890-3397-2
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			4.96 g	5 mL	38855	11/07/22 11:02	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38810	11/07/22 23:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			39005	11/08/22 13:40	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38990	11/08/22 11:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38817	11/07/22 09:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38798	11/07/22 19:23	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	38820	11/07/22 09:28	CH	EET MID
Soluble	Analysis	300.0		50			39046	11/09/22 15:52	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 145

Job ID: 890-3397-1
SDG: 03D2057027

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

Method Summary

Client: Ensolum
Project/Site: MCA 145

Job ID: 890-3397-1
SDG: 03D2057027

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 145

Job ID: 890-3397-1
SDG: 03D2057027

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3397-1	PH02	Solid	10/21/22 12:35	11/04/22 13:10	1
890-3397-2	PH02	Solid	10/21/22 12:40	11/04/22 13:10	4

Chain of Custody

eurofins | 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

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 Marienfeld St Suite 400	Address:	601 N Marienfeld St Suite 400
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Midland, TX 79701
Phone:	817-683-2503	Email:	kjennings@ensolum.com, hgreen@ensolum.com

Work Order Comments

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

Project Name:	MCA 145	Turn Around	
Project Number:	03D2057027	☑ Routine ☐ Rush	
Project Location:	32.805570,-103.748544	Due Date:	
Sampler's Name:	Conner 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:	NM007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.0
Total Containers:		Corrected Temperature:	3.8

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
PH02	s	10/21/2022	1235	1'	g	1		x	x	x
PH02	s	10/21/2022	1240	4'	g	1		x	x	x

Parameters

890-3397 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2SO_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V 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 Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		11-4-22 1510	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220
Phone 575-988-3199 Fax 575-988-3199

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM	Carrier Tracking No(s)	COC No
Client Contact: Shipping/Receiving	Phone:	Kramer Jessica		890-1011 1
Company: Eurofins Environment Testing South Centr		E-Mail: Jessica Kramer@et.eurofinsus com	State of Origin: New Mexico	Page: Page 1 of 1
Address: 1211 W Florida Ave	Due Date Requested: 11/10/2022	Accreditations Required (See note): NELAP - Texas		Job #: 890-3397 1
City: Midland	TAT Requested (days):			
State Zip: TX 79701				
Phone: 432-704-5440(Tel)	PO #:			
Email	WO #:			
Project Name: MCA 145	Project #: 89000094			
Site	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O - AsNaO2, P Na2O4S, Q - Na2SO3, R Na2S2O3, S H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep (MOD) Full TPH	8015MOD_Calc	300_ORGFM_28D/DI_LEACH Chloride	8021B/5035FP_Calc (MOD) BTEX	Total_BTEX_GCV	Total Number of containers	Special Instructions/Note.
			Preservation Code:										
PH02 (890-3397-1)	10/21/22	12 35 Mountain		Solid			X	X	X	X	X	1	
PH02 (890-3397-2)	10/21/22	12 40 Mountain		Solid			X	X	X	X	X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact	Custody Seal No	Cooler Temperature(s) °C and Other Remarks.
Δ Yes Δ No		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3397-1
SDG Number: 03D2057027

Login Number: 3397
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: 890-3397-1
SDG Number: 03D2057027

Login Number: 3397
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 11/07/22 09:10 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	

ENSOLUM

APPENDIX E

NMOCD Notifications

From: Nobui, Jennifer, EMNRD
To: Kalei Jennings
Cc: Bratcher, Michael, EMNRD
Subject: FW: [EXTERNAL] Maverick- Sampling Notification (Week of 10/31/2022)
Date: Wednesday, October 26, 2022 4:04:54 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.jpg

[**EXTERNAL EMAIL**]

Kalei

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

Thanks,
Jennifer Nobui

From: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Sent: Wednesday, October 26, 2022 3:58 PM
To: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Subject: FW: [EXTERNAL] Maverick- Sampling Notification (Week of 10/31/2022)

Jocelyn Harimon ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@state.nm.us
http:// **www.emnrd.nm.gov**

From: Kalei Jennings <kjennings@ensolum.com>
Sent: Wednesday, October 26, 2022 3:37 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Maverick- Sampling Notification (Week of 10/31/2022)

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

All,

On behalf of Maverick Natural Resources, LLC we respectfully submit notification of sampling to be conducted at the below locations the week of 10/31/2022.

Leamex 8 / Incident Number NAPP2200641724
MCA 145 / Incident Number NAPP2229469315
Leamex 018 / Incident Number NAPP2229947721

Thank you,

Kalei Jennings
Senior Scientist
817-683-2503
Ensolum, LLC

ENSOLUM

APPENDIX F

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	nAPP2229469315
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Maverick Permian, LLC	OGRID: 331199
Contact Name: Bryce Wagoner	Contact Telephone: 928-241-1862
Contact email: Bryce.Wagoner@mavresources.com	Incident # *(assigned by OCD)*
Contact mailing address: 1410 NW County Road Hobbs, NM 88240	

Location of Release Source

Latitude 32.805570 Longitude -103.748544

(NAD 83 in decimal degrees to 5 decimal places)

Site Name MCA Unit #145	Site Type
Date Release Discovered October 14, 2022	API# *(if applicable)* *30-025-00714*

Unit Letter	Section	Township	Range	County
H	27	17S	32E	Lea

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 39.16 bbls	Volume Recovered (bbls) 21.16 bbls
☒ Produced Water	Volume Released (bbls) 254.24 bbls	Volume Recovered (bbls) 238.84
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
The release was caused by an injection line rupture due to corrosion. The release occurred off pad. The source of the release has been stopped and the impacted area has been secured. An evaluation will be conducted at the Site to determine if we may commence remediation immediately or delineate any possible impact from the release.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2229469315
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume greater than 25 bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notice was given by Kalei Jennings with Ensolum on behalf of Maverick Permian via email on October 15, 2022 at 12:32 PM to ocd.enviro@emnrd.nm.gov and EMNRD-OCD-District1spills@emnrd.nm.gov

Initial Response

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

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: ____Bryce Wagoner _____ Title: ___Permian HSE Specialist II_____

Signature: _____ Date: __10/21/2022_____

email: _____Bryce.Wagoner@mavresources.com____ Telephone: ___928-241-1862_____

OCD Only

Received by: ___Jocelyn Harimon_____ Date: ___01/18/2023__

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2229469315
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2229469315
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: 1/12/2022

email: bryce.wagoner@mavresources.com Telephone: 928-241-1862

OCD Only

Received by: Jocelyn Harimon Date: 01/18/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2229469315
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: 1/12/2022

email: bryce.wagoner@mavresources.com Telephone: 928-241-1862

OCD Only

Received by: Jocelyn Harimon Date: 01/18/2023

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

Signature: Jennifer Nobui Date: 02/09/2023

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2229469315
District RP	
Facility ID	
Application ID	

Closure

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

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

☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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 177225

CONDITIONS

Operator: Maverick Permian LLC 1111 Bagby Street Suite 1600 Houston, TX 77002	OGRID: 331199
	Action Number: 177225
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Remediation Plan Approved with Conditions. The depth to groundwater has not been adequately determined for the least stringent criteria (20,000 mg/kg chloride). When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater. OCD will accept dtw 51-100' and 10,000 mg/kg chloride. Please ensure your remediation efforts reflect the accepted criteria. Composite confirmation samples will be collected from the bottom of the excavation from areas representing no more than four hundred (400) square feet. Composite confirmation samples will be collected from the sidewalls of the excavation from areas representing no more than two hundred (200) sq ft.	2/9/2023