ENSOLUM

December 28, 2022

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

Re: Revised Remediation Work Plan
Elvis Injection Line
Incident Number NAPP2213642290
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of Maverick Natural Resources, LLC (Maverick), has prepared the following *Revised Remediation Work Plan* (RRWP) to document site assessment and soil sampling activities and provide supplemental information requested in the denial of the original *Remediation Work Plan* (RWP), dated October 31, 2022. Maverick received the denial notice from the New Mexico Oil Conservation Division (NMOCD) on November 28, 2022. In the denial, NMOCD stated:

> *Remediation Plan Denied. The depth to groundwater has not been adequately determined. 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. Release has not been adequately delineated. Please resubmit a revised Remediation Plan to the OCD portal by December 28, 2022.*

Similar to the original RWP, the following RRWP proposes excavation of impacted soil in the top 4 feet, but adds installation of a depth to water boring to confirm the Closure Criteria at the Site to address NMOCD's denial.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit F, Section 20, Township 17 South, Range 32 East, in Lea County, New Mexico (32.820368°N, 103.789382°W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On May 4, 2022, corrosion from an injection line resulted in the release of approximately 30.12 barrels (bbls) of produced water into the pasture where fluids pooled. Approximately 1 bbl of released fluids was recovered. The previous operator, ConocoPhillips Company (COP), immediately reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on May 4, 2022 and submitted a Release Notification Form C-141 (Form C-141) on May 16, 2022. The release was assigned Incident Number NAPP2213642290.

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

SITE CHARACTERIZATION AND CLOSURE CRITERIA

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

Based on the results of the Site Characterization presented in the RWP, the following NMOCD Table I Closure Criteria (Closure Criteria) are applied:

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

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

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On October 19, 2022, personnel completed a Site visit to evaluate the release extent based on information provided on the Form C-141 and visual observations. Delineation activities were conducted at the Site to assess the vertical extent of the release. Potholes PH01 through PH05 were advanced via hydro-vacuum (hydro-vac) and track-mounted backhoe within the release extent. The delineation potholes were advanced to a depth of approximately 15 feet bgs before encountering refusal. Discrete delineation soil samples were collected from each pothole at depths ranging from 1-foot to 15 feet bgs. Soil from the potholes were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride Hach® chloride QuanTab® test strips. The release extent and 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.

Laboratory analytical results for the delineation soil samples PH01 through PH05, indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for the delineation soil samples collected from potholes PH04 and PH05 indicated waste-containing soil is

present within the top 4 feet of soil off pad. The laboratory analytical results are summarized on the attached Table 1 and the complete laboratory analytical reports are included in Appendix C.

PROPOSED REMEDIATION WORK PLAN

Waste-containing soil has been detected in the top 4 feet of soil off pad as indicated potholes PH04 and PH05 to a total depth of 3 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 greater than 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.
- Sidewall samples will be collected at a frequency of every 200 square feet. The 5-point composite samples will be collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The excavation samples will be analyzed for chloride only.
- 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 has been met on the floor of the excavation.
- An estimated 500 cubic yards of waste-containing 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.
- In order to verify depth to groundwater is greater than 100 feet bgs at the Site and confirm the applied Closure Criteria, Maverick proposes to complete a depth to water boring within ½ mile of the release. The soil boring will be advanced to a depth of approximately 110 feet bgs or until groundwater is encountered. An Ensolum geologist will log and describe soils continuously and will document observations on a lithologic/soil sampling log. The borehole will be left open for at least 72 hours to allow for the potential slow infill of groundwater. Following the 72-hour waiting period, depth to groundwater will be measured or the Ensolum geologist will confirm the boring is dry. The borehole will be properly abandoned following New Mexico Office of the State Engineer (NMOSE) plugging and abandonment procedures. Maverick will include documentation of the soil boring installation and lithologic/soil sampling log in the subsequent deliverable.

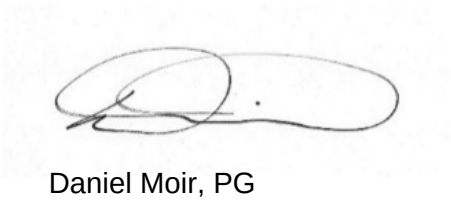
Maverick will complete the excavation activities within 90 days of the date of approval of this RRWP by the NMOCD. A report detailing remedial actions will be submitted within 30 days of receipt of laboratory analytical results and completion of drilling activities. The depth to water soil boring will be completed as soon as possible following approval from the surface landowner, receipt of the NMOSE drilling permit, and scheduling with a driller, which could impact the time to drill based on availability.

Maverick believes the scope of work described above will meet requirements set forth in 19.15.29.13 NMAC and will be protective of human health, the environment, and groundwater. As such, Maverick respectfully requests approval of this RRWP 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 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	Final C-141

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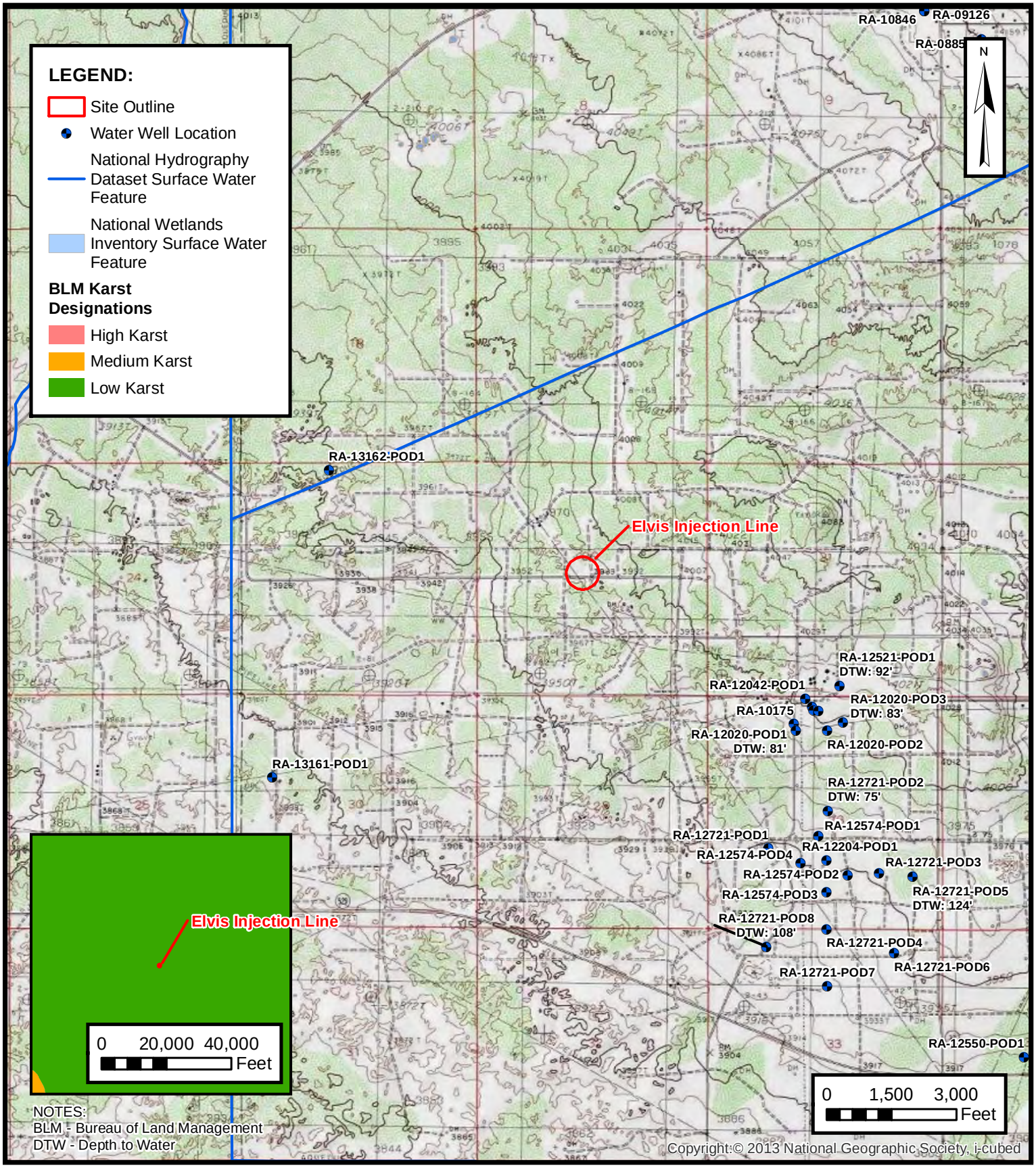
FIGURES



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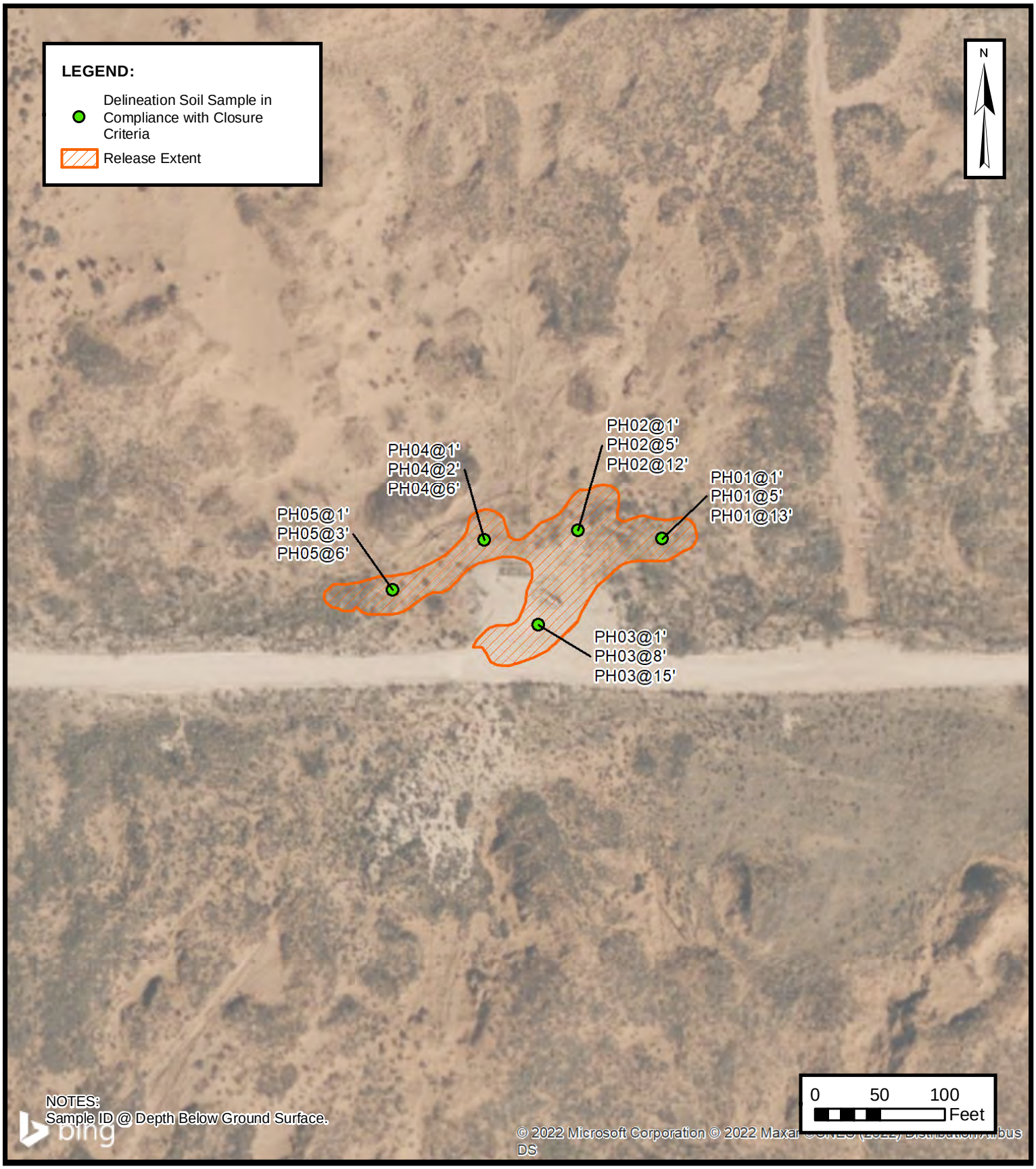
SITE RECEPTOR MAP

MAVERICK NATURAL RESOURCES, LLC
ELVIS INJECTION LINE
NAPP2213642290
Unit F, Sec 20, T17S, R32E
Lea County, New Mexico

FIGURE
1



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DELINEATION SOIL SAMPLE LOCATIONS

MAVERICK NATURAL RESOURCES, LLC
ELVIS INJECTION LINE
NAPP2213642290
Unit F, Sec 20, T17S, R32E
Lea County, New Mexico

FIGURE
2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Elvis Injection Line
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**	**10,000**
Delineation Soil Samples										
PH01	10/19/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	242*
PH01	10/19/2022	5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	6,410
PH01	10/19/2022	13	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	787
PH02	10/19/2022	1	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	165*
PH02	10/19/2022	5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	8,760
PH02	10/19/2022	12	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	1,120
PH03	10/19/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	1,260
PH03	10/19/2022	8	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	4,810
PH03	10/19/2022	15	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	4,020
PH04	10/19/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	2,020*
PH04	10/19/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	1,560*
PH04	10/19/2022	6	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	162
PH05	10/19/2022	1	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	403*
PH05	10/19/2022	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	4,530*
PH05	10/19/2022	6	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	431

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

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

* indicates sample was collected in area to be reclaimed after remediation is complete; the reclamation criteria applies to these samples

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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
	RA 12042 POD1	2	2	1	28	17S	32E	614891	3631181

Driller License: 1261 **Driller Company:** DARRELL CRASS DRILLING CO., INC

Driller Name: CRASS, DARRELL (LD)

Drill Start Date:	11/13/2013	**Drill Finish Date:**	11/22/2013	**Plug Date:**	
Log File Date:	12/12/2013	**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	10.00	**Depth Well:**	400 feet	**Depth Water:**	

Water Bearing Stratifications:	Top	Bottom	Description
	10	30	Sandstone/Gravel/Conglomerate

185.31E.01.44432

IMPORTANT Inventory Page

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

1 year 10 years Period of record

Change time span | Retrieve data

Depth to water level, ft below land surface

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APPENDIX B

Photographic Log

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Photographic Log
Maverick Natural Resources, LLC
Elvis Injection Line
Incident Number NAPP2213642290

Photograph: 1 Date: 5/5/2022
Description: Soil staining in release footprint
View: Northwest

Photograph: 2 Date: 5/5/2022
Description: Soil staining in release footprint
View: Northwest

Photograph: 3 Date: 10/19/2022
Description: Delineation activities
View: East

Photograph: 4 Date: 10/19/2022
Description: Delineation Activities
View: North

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APPENDIX C

Lithologic Soil Sampling Logs

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	Sample Name: PH01	Date: 10/19/2022
	Site Name: Elvis Injection Line	
	Incident Number: NAPP2213642290	
	Job Number: 03D2057011	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS/PV	Method: Hand Auger
Coordinates: 32.8204559, -103.7890876	Hole Diameter: 4"	Total Depth: 13'

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		
D	207	0.0	N	PH01	1	1	SPSM	SAND, reddish brown, medium to fine grain, poorly graded, no staining, no odor.
D	1,646	0.2	N			2	SPSM	SAA
D	1,646	0.4	N			3	SPSM	SAA
D	1,316	0.5	N			4	SPSM	SAA
D	1,290	0.2	N	PH01A	5	5	SPSM	SAA
D	3,589	0.5	N			6	SPSM	SAA
D			N			7	SPSM	SAA
D			N			8	SPSM	SAA
D	10,046	0.2	N			9	SPSM	SAA
D			N			10	SPSM	SAA
D			N			11	SPSM	SAA, more clay
D	526	0.1	N			12	SPSC	SAA, some plant matter
D	526	0.1	N	PH01B	13	13	SPSC	SAA, more clay, no plant matter

TD @ 13 FEET BGS

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	Sample Name: PH02	Date: 10/19/2022
	Site Name: Elvis Injection Line	
	Incident Number: NAPP2213642290	
	Job Number: 03D2057011	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS/PV	Method: Hand Auger
Coordinates: 32.8204706, -103.7892647	Hole Diameter: 4"	Total Depth: 12'

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

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	207	0.2	N	PH02	1	1	SPSM	SAND, reddish brown, medium to fine grain, poorly graded, no staining, no odor.
D	280	0.2	N			2	SPSM	SAA
D	1,036	0.4	N			3	SPSM	SAA
D	1,316	0.4	N			4	SPSM	SAA
D	9,290	0.5	N	PH02A	5	5	SPSM	SAA
D	7,341	0.5	N			6	SPSM	SAA, more clay
D	4,860	0.9	N			7	SPSM	SAA
D	7,341	0.3	N			8	CCHE	CALICHE
D			N			9	CCHE	SAA
D			N			10	CCHE	SAA
D	1,215	0.1	N			11	CCHE	SAA
D	1,215	0.1	N	PH02B	12	12	CCHE	SAA

TD @ 12 FEET BGS

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	Sample Name: PH03	Date: 10/19/2022
	Site Name: Elvis Injection Line	
	Incident Number: NAPP2213642290	
	Job Number: 03D2057011	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS/PV	Method: Hand Auger
Coordinates: 32.8203032, -103.7893491	Hole Diameter: 4"	Total Depth: 15'

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		
D	929	0.5	N	PH03	1	1	CCHE	CALICHE, well pad poorly graded, no staining, no odor.
D	1,288	0.4	N			2	SPSM	SAND, reddish brown, medium to fine grain, poorly graded, no staining, no odor.
D	2,139	0.5	N			3	SPSM	SAA
D	2,296	0.4	N			4	SPSM	SAA
D			N			5	SPSM	SAA
D	3,707	0.3	N			6	SPSM	SAA
D			N			7	SPSM	SAA
D	19,297	0.3	N	PH03A	8	8	SPSM	SAA
D			N			9	SPSM	SAA
D	3,544	0.3	N			10	SPSC	SAND, reddish brown, poorly graded, medium to fine grain, no stain, no odor.
D			N			11	SPSC	SAA
D	5,756	0.5	N			12	SPSC	SAA
D			N			13	SPSC	SAA
D			N			14	SPSC	SAA
D	5292	0.3	N	PH03B	15	15	SPSC	SAA

TD @ 15 FEET BGS

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	Sample Name: PH04	Date: 10/19/2022
	Site Name: Elvis Injection Line	
	Incident Number: NAPP2213642290	
	Job Number: 03D2057011	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS/PV	Method: Hand Auger
Coordinates: 32.8204537, -103.7894618	Hole Diameter: 4"	Total Depth: 10'

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		
D	2,329	0.3	N	PH04	1	1	SPSM	SAND, reddish brown, medium to fine grain, poorly graded, no staining, no odor.
D	1,764	0.3	N	PH04A	2	2	SPSM	SAA
D	789	0.4	N			3	SPSM	SAA
D	1,892	0.2	N			4	SPSM	SAA
D			N			5	SPSM	SAA
D	<168	0.3	N	PH04B	6	6	SPSM	SAA
D			N			7	SPSM	SAA
D	<168	0.5	N			8	CCHE	CALICHE with sand.
D			N			9	CCHE	SAA
D	<168	0.1	N			10	CCHE	SAA

TD @ 10 FEET BGS

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	Sample Name: PH05	Date: 10/19/2022
	Site Name: Elvis Injection Line	
	Incident Number: NAPP2213642290	
	Job Number: 03D2057011	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS/PV	Method: Hand Auger
Coordinates: 32.8203646, -103.7896556	Hole Diameter: 4"	Total Depth: 10'

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		
D	414	0.2	N	PH05	1	1	SPSM	SAND, reddish brown, medium to fine grain, poorly graded, no staining, no odor.
D	280	0.3	N			2	SPSM	SAA
D	5,756	0.3	N	PH05A	3	3	SPSM	SAA
D	929	0.3	N			4	SPSM	SAA
D			N			5	SPSM	SAA
D	526	0.3	N	PH05B	6	6	SPSM	SAA
D			N			7	SPSM	SAA
D	856	0.3	N			8	SPSM	SAA
D			N			9	SPSM	SAA
D	364	0.6	N	PH05C	10	10	SPSM	SAA

TD @ 10 FEET BGS

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APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

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

Laboratory Job ID: 890-3236-1
Laboratory Sample Delivery Group: 03D2057011
Client Project/Site: Elivis Injection Line

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/28/2022 10:57:43 AM

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

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

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

Client: Ensolum
Project/Site: Elivis Injection Line

Laboratory Job ID: 890-3236-1
SDG: 03D2057011

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-3236-1
Project/Site: Elivis Injection Line SDG: 03D2057011

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Job ID: 890-3236-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3236-1

Receipt
The samples were received on 10/20/2022 9:38 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH05 (890-3236-1), PH05 (890-3236-2), PH05 (890-3236-3) and PH05 (HOLD) (890-3236-4).

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

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37510 and analytical batch 880-37597 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: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Client Sample ID: PH05

Date Collected: 10/19/22 14:00
Date Received: 10/20/22 09:38
Sample Depth: 1

Lab Sample ID: 890-3236-1
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		10/27/22 09:43	10/27/22 21:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 21:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 21:48	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/27/22 09:43	10/27/22 21:48	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 21:48	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/27/22 09:43	10/27/22 21:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*10/27/22 09:43*	*10/27/22 21:48*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*10/27/22 09:43*	*10/27/22 21:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			10/28/22 10:42	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			10/24/22 12:22	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/21/22 13:46	10/22/22 05:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/21/22 13:46	10/22/22 05:16	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:46	10/22/22 05:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*10/21/22 13:46*	*10/22/22 05:16*	*1*
o-Terphenyl	*83*		*70 - 130*	*10/21/22 13:46*	*10/22/22 05:16*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**403**	**F1**	5.04		mg/Kg			10/23/22 17:06	1

Client Sample ID: PH05

Date Collected: 10/19/22 14:10
Date Received: 10/20/22 09:38
Sample Depth: 3

Lab Sample ID: 890-3236-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/27/22 09:43	10/27/22 22:09	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/27/22 09:43	10/27/22 22:09	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/27/22 09:43	10/27/22 22:09	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/27/22 09:43	10/27/22 22:09	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/27/22 09:43	10/27/22 22:09	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/27/22 09:43	10/27/22 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*10/27/22 09:43*	*10/27/22 22:09*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Client Sample ID: PH05
Date Collected: 10/19/22 14:10
Date Received: 10/20/22 09:38
Sample Depth: 3

Lab Sample ID: 890-3236-2
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*	*10/27/22 09:43*	*10/27/22 22:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/28/22 10:42	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			10/24/22 12:22	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 13:46	10/22/22 04:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/21/22 13:46	10/22/22 04:33	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 13:46	10/22/22 04:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*10/21/22 13:46*	*10/22/22 04:33*	*1*
o-Terphenyl	*104*		*70 - 130*	*10/21/22 13:46*	*10/22/22 04:33*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4530**		25.0	mg/Kg			10/23/22 17:20	5

Client Sample ID: PH05
Date Collected: 10/19/22 14:20
Date Received: 10/20/22 09:38
Sample Depth: 6

Lab Sample ID: 890-3236-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/27/22 09:43	10/27/22 22:29	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/27/22 09:43	10/27/22 22:29	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/27/22 09:43	10/27/22 22:29	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/27/22 09:43	10/27/22 22:29	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/27/22 09:43	10/27/22 22:29	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/27/22 09:43	10/27/22 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*10/27/22 09:43*	*10/27/22 22:29*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*10/27/22 09:43*	*10/27/22 22:29*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/28/22 10:42	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			10/24/22 12:22	1

Client Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Client Sample ID: PH05

Date Collected: 10/19/22 14:20
Date Received: 10/20/22 09:38
Sample Depth: 6

Lab Sample ID: 890-3236-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 04:55	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 04:55	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 04:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*10/21/22 13:46*	*10/22/22 04:55*	*1*
o-Terphenyl	*108*		*70 - 130*	*10/21/22 13:46*	*10/22/22 04:55*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**431**		5.00		mg/Kg			10/23/22 17:25	1

Surrogate Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

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)								
890-3236-1	PH05	112	99								
890-3236-2	PH05	115	99								
890-3236-3	PH05	116	93								
890-3252-A-2-B MS	Matrix Spike	114	101								
890-3252-A-2-C MSD	Matrix Spike Duplicate	125	93								
LCS 880-37686/1-A	Lab Control Sample	111	98								
LCS 880-37987/1-A	Lab Control Sample	96	96								
LCSD 880-37686/2-A	Lab Control Sample Dup	111	94								
LCSD 880-37987/2-A	Lab Control Sample Dup	104	101								
MB 880-37987/5-A	Method Blank	111	106								

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)								
890-3236-1	PH05	75	83								
890-3236-2	PH05	87	104								
890-3236-3	PH05	90	108								
890-3237-A-1-B MS	Matrix Spike	84	91								
890-3237-A-1-C MSD	Matrix Spike Duplicate	83	89								
LCS 880-37501/2-A	Lab Control Sample	97	120								
LCSD 880-37501/3-A	Lab Control Sample Dup	96	116								
MB 880-37501/1-A	Method Blank	90	108								

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: LCS 880-37686/1-A
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37686

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08480		mg/Kg		85	70 - 130		
Toluene			0.100	0.09591		mg/Kg		96	70 - 130		
Ethylbenzene			0.100	0.08819		mg/Kg		88	70 - 130		
m-Xylene & p-Xylene			0.200	0.1857		mg/Kg		93	70 - 130		
o-Xylene			0.100	0.1003		mg/Kg		100	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 880-37686/2-A
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37686

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09111		mg/Kg		91	70 - 130	7	35
Toluene			0.100	0.1067		mg/Kg		107	70 - 130	11	35
Ethylbenzene			0.100	0.09617		mg/Kg		96	70 - 130	9	35
m-Xylene & p-Xylene			0.200	0.2029		mg/Kg		101	70 - 130	9	35
o-Xylene			0.100	0.1086		mg/Kg		109	70 - 130	8	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 890-3252-A-2-B MS
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37686

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.0998	0.09028		mg/Kg		90	70 - 130		
Toluene	<0.00201	U	0.0998	0.09150		mg/Kg		92	70 - 130		
Ethylbenzene	<0.00201	U	0.0998	0.08339		mg/Kg		84	70 - 130		
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1745		mg/Kg		87	70 - 130		
o-Xylene	<0.00201	U	0.0998	0.09453		mg/Kg		95	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 890-3252-A-2-C MSD
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37686

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0990	0.06966		mg/Kg		70	70 - 130	26	35
Toluene	<0.00201	U	0.0990	0.08940		mg/Kg		90	70 - 130	2	35
Ethylbenzene	<0.00201	U	0.0990	0.08208		mg/Kg		83	70 - 130	2	35

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

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

Lab Sample ID: 890-3252-A-2-C MSD
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37686

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1737		mg/Kg		88	70 - 130	0	35
o-Xylene	<0.00201	U	0.0990	0.09585		mg/Kg		97	70 - 130	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*125*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: MB 880-37987/5-A
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37987

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 14:04	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 14:04	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 14:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/27/22 09:43	10/27/22 14:04	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/27/22 09:43	10/27/22 14:04	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/27/22 09:43	10/27/22 14:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*10/27/22 09:43*	*10/27/22 14:04*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*10/27/22 09:43*	*10/27/22 14:04*	*1*

Lab Sample ID: LCS 880-37987/1-A
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37987

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09096		mg/Kg		91	70 - 130		
Toluene			0.100	0.09666		mg/Kg		97	70 - 130		
Ethylbenzene			0.100	0.08571		mg/Kg		86	70 - 130		
m-Xylene & p-Xylene			0.200	0.1777		mg/Kg		89	70 - 130		
o-Xylene			0.100	0.09292		mg/Kg		93	70 - 130		

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

Lab Sample ID: LCSD 880-37987/2-A
Matrix: Solid
Analysis Batch: 37962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37987

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1002		mg/Kg		100	70 - 130	10	35
Toluene			0.100	0.1110		mg/Kg		111	70 - 130	14	35
Ethylbenzene			0.100	0.09703		mg/Kg		97	70 - 130	12	35
m-Xylene & p-Xylene			0.200	0.2041		mg/Kg		102	70 - 130	14	35
o-Xylene			0.100	0.1074		mg/Kg		107	70 - 130	14	35

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QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

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

Lab Sample ID: MB 880-37501/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37440 — **Prep Batch: 37501**

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		10/21/22 13:46	10/21/22 20:18	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/21/22 13:46	10/21/22 20:18	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:46	10/21/22 20:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130	10/21/22 13:46	10/21/22 20:18	1
o-Terphenyl	108		70 - 130	10/21/22 13:46	10/21/22 20:18	1

Lab Sample ID: LCS 880-37501/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37440 — **Prep Batch: 37501**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1112		mg/Kg		111	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1053		mg/Kg		105	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: LCSD 880-37501/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37440 — **Prep Batch: 37501**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	950.0		mg/Kg		95	70 - 130	16	20
Diesel Range Organics (Over C10-C28)			1000	1029		mg/Kg		103	70 - 130	2	20

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

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

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

Lab Sample ID: 890-3237-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37440 — **Prep Batch: 37501**

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	1078		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	133		998	1006		mg/Kg		87	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*84*		*70 - 130*
o-Terphenyl	*91*		*70 - 130*

Lab Sample ID: 890-3237-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37440 — **Prep Batch: 37501**

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	1136		mg/Kg		111	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	133		998	1003		mg/Kg		87	70 - 130	0	20

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37510/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/23/22 16:51	1

Lab Sample ID: LCS 880-37510/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			250	258.4		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-37510/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	255.9		mg/Kg		102	90 - 110	1	20

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3236-1 MS
Matrix: Solid
Analysis Batch: 37597

Client Sample ID: PH05
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	403	F1	252	626.5	F1	mg/Kg		89	90 - 110		

Lab Sample ID: 890-3236-1 MSD
Matrix: Solid
Analysis Batch: 37597

Client Sample ID: PH05
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	403	F1	252	629.1		mg/Kg		90	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

GC VOA

Prep Batch: 37686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-37686/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37686/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3252-A-2-B MS	Matrix Spike	Total/NA	Solid	5035	
890-3252-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Total/NA	Solid	8021B	37987
890-3236-2	PH05	Total/NA	Solid	8021B	37987
890-3236-3	PH05	Total/NA	Solid	8021B	37987
MB 880-37987/5-A	Method Blank	Total/NA	Solid	8021B	37987
LCS 880-37686/1-A	Lab Control Sample	Total/NA	Solid	8021B	37686
LCS 880-37987/1-A	Lab Control Sample	Total/NA	Solid	8021B	37987
LCSD 880-37686/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37686
LCSD 880-37987/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37987
890-3252-A-2-B MS	Matrix Spike	Total/NA	Solid	8021B	37686
890-3252-A-2-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37686

Prep Batch: 37987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Total/NA	Solid	5035	
890-3236-2	PH05	Total/NA	Solid	5035	
890-3236-3	PH05	Total/NA	Solid	5035	
MB 880-37987/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37987/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37987/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 38085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Total/NA	Solid	Total BTEX	
890-3236-2	PH05	Total/NA	Solid	Total BTEX	
890-3236-3	PH05	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Total/NA	Solid	8015B NM	37501
890-3236-2	PH05	Total/NA	Solid	8015B NM	37501
890-3236-3	PH05	Total/NA	Solid	8015B NM	37501
MB 880-37501/1-A	Method Blank	Total/NA	Solid	8015B NM	37501
LCS 880-37501/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37501
LCSD 880-37501/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37501
890-3237-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	37501
890-3237-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37501

Prep Batch: 37501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Total/NA	Solid	8015NM Prep	
890-3236-2	PH05	Total/NA	Solid	8015NM Prep	
890-3236-3	PH05	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

GC Semi VOA (Continued)

Prep Batch: 37501 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-37501/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37501/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37501/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3237-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3237-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Total/NA	Solid	8015 NM	
890-3236-2	PH05	Total/NA	Solid	8015 NM	
890-3236-3	PH05	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Soluble	Solid	DI Leach	
890-3236-2	PH05	Soluble	Solid	DI Leach	
890-3236-3	PH05	Soluble	Solid	DI Leach	
MB 880-37510/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37510/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37510/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3236-1 MS	PH05	Soluble	Solid	DI Leach	
890-3236-1 MSD	PH05	Soluble	Solid	DI Leach	

Analysis Batch: 37597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3236-1	PH05	Soluble	Solid	300.0	37510
890-3236-2	PH05	Soluble	Solid	300.0	37510
890-3236-3	PH05	Soluble	Solid	300.0	37510
MB 880-37510/1-A	Method Blank	Soluble	Solid	300.0	37510
LCS 880-37510/2-A	Lab Control Sample	Soluble	Solid	300.0	37510
LCSD 880-37510/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37510
890-3236-1 MS	PH05	Soluble	Solid	300.0	37510
890-3236-1 MSD	PH05	Soluble	Solid	300.0	37510

Lab Chronicle

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Client Sample ID: PH05

Date Collected: 10/19/22 14:00
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3236-1
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			4.99 g	5 mL	37987	10/27/22 09:43	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37962	10/27/22 21:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38085	10/28/22 10:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			37668	10/24/22 12:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	37501	10/21/22 13:46	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37440	10/22/22 05:16	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	37510	10/21/22 14:10	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37597	10/23/22 17:06	CH	EET MID

Client Sample ID: PH05

Date Collected: 10/19/22 14:10
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3236-2
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			5.02 g	5 mL	37987	10/27/22 09:43	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37962	10/27/22 22:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38085	10/28/22 10:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			37668	10/24/22 12:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	37501	10/21/22 13:46	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37440	10/22/22 04:33	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	37510	10/21/22 14:10	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	37597	10/23/22 17:20	CH	EET MID

Client Sample ID: PH05

Date Collected: 10/19/22 14:20
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3236-3
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			5.03 g	5 mL	37987	10/27/22 09:43	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37962	10/27/22 22:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38085	10/28/22 10:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			37668	10/24/22 12:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37501	10/21/22 13:46	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37440	10/22/22 04:55	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	37510	10/21/22 14:10	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37597	10/23/22 17:25	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: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

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: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

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: Elivis Injection Line

Job ID: 890-3236-1
SDG: 03D2057011

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3236-1	PH05	Solid	10/19/22 14:00	10/20/22 09:38	1
890-3236-2	PH05	Solid	10/19/22 14:10	10/20/22 09:38	3
890-3236-3	PH05	Solid	10/19/22 14:20	10/20/22 09:38	6

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Chain of Custody

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

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Work Order No: _____

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:		Email:	kjennings@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:	Elvis Injection Line	Turn Around		Pres. Code	
Project Number:	03D2057011	☑ Routine	☐ Rush		
Project Location:		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:	TNM 007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	3.8	
Total Containers:		Corrected Temperature:	3.6	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH05	S	10.19.22	1400	1'	G	1	X	X	X
PH05	S	10.19.22	1410	3'	G	1	X	X	X
PH05	S	10.19.22	1420	6'	G	1	X	X	X
PH05 (HOLD)	S	10.19.22	1430	10'	G	1	X	X	X

890-3236 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

Incident Number
HOLD PENDING 6' SAMPLE

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 Scott	10/20/22 935			
3			4		
5			6		

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3236-1
SDG Number: 03D2057011

Login Number: 3236
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: 890-3236-1
SDG Number: 03D2057011

Login Number: 3236
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/21/22 10:46 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3238-1
Laboratory Sample Delivery Group: 03D2057011
Client Project/Site: Elivis Injection Line

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/26/2022 9:08:04 AM

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

Client: Ensolum
Project/Site: Elivis Injection Line

Laboratory Job ID: 890-3238-1
SDG: 03D2057011

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Job ID: 890-3238-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3238-1

Receipt
The samples were received on 10/20/2022 9:38 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH04 (890-3238-1), PH04 (890-3238-2) and PH04 (890-3238-3).

GC VOA
Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-20579-A-11-D MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37510 and analytical batch 880-37597 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: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Client Sample ID: PH04

Date Collected: 10/19/22 10:00
Date Received: 10/20/22 09:38
Sample Depth: 1

Lab Sample ID: 890-3238-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 04:42	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 04:42	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 04:42	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/24/22 13:20	10/26/22 04:42	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 04:42	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/24/22 13:20	10/26/22 04:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*10/24/22 13:20*	*10/26/22 04:42*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/24/22 13:20*	*10/26/22 04:42*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/26/22 09:33	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			10/24/22 12:22	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		10/21/22 13:46	10/22/22 03:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 03:27	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 03:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*10/21/22 13:46*	*10/22/22 03:27*	*1*
o-Terphenyl	*86*		*70 - 130*	*10/21/22 13:46*	*10/22/22 03:27*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2020**		24.8		mg/Kg			10/23/22 17:59	5

Client Sample ID: PH04

Date Collected: 10/19/22 10:15
Date Received: 10/20/22 09:38
Sample Depth: 2

Lab Sample ID: 890-3238-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 05:03	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 05:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 05:03	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		10/24/22 13:20	10/26/22 05:03	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 05:03	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		10/24/22 13:20	10/26/22 05:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*10/24/22 13:20*	*10/26/22 05:03*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Client Sample ID: PH04

Date Collected: 10/19/22 10:15
Date Received: 10/20/22 09:38
Sample Depth: 2

Lab Sample ID: 890-3238-2

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*	*10/24/22 13:20*	*10/26/22 05:03*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			10/26/22 09:33	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			10/24/22 12:22	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		10/21/22 13:46	10/22/22 03:49	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/21/22 13:46	10/22/22 03:49	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/21/22 13:46	10/22/22 03:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*10/21/22 13:46*	*10/22/22 03:49*	*1*
o-Terphenyl	*105*		*70 - 130*	*10/21/22 13:46*	*10/22/22 03:49*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1560**		24.8	mg/Kg			10/23/22 18:04	5

Client Sample ID: PH04

Date Collected: 10/19/22 10:30
Date Received: 10/20/22 09:38
Sample Depth: 6

Lab Sample ID: 890-3238-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 05:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 05:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 05:23	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/24/22 13:20	10/26/22 05:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 05:23	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/24/22 13:20	10/26/22 05:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*10/24/22 13:20*	*10/26/22 05:23*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*10/24/22 13:20*	*10/26/22 05:23*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/26/22 09:33	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			10/24/22 12:22	1

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Client Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Client Sample ID: PH04

Date Collected: 10/19/22 10:30
Date Received: 10/20/22 09:38
Sample Depth: 6

Lab Sample ID: 890-3238-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 04:11	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 04:11	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/21/22 13:46	10/22/22 04:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*10/21/22 13:46*	*10/22/22 04:11*	*1*
o-Terphenyl	*99*		*70 - 130*	*10/21/22 13:46*	*10/22/22 04:11*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**162**		5.00		mg/Kg			10/23/22 18:09	1

Surrogate Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

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)
880-20579-A-11-C MS	Matrix Spike	89	99
880-20579-A-11-D MSD	Matrix Spike Duplicate	97	105
890-3238-1	PH04	115	92
890-3238-2	PH04	101	99
890-3238-3	PH04	95	99
LCS 880-37678/1-A	Lab Control Sample	92	101
LCSD 880-37678/2-A	Lab Control Sample Dup	94	96
MB 880-37517/5-A	Method Blank	109	105
MB 880-37678/5-A	Method Blank	108	106

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)
890-3237-A-1-B MS	Matrix Spike	84	91
890-3237-A-1-C MSD	Matrix Spike Duplicate	83	89
890-3238-1	PH04	75	86
890-3238-2	PH04	94	105
890-3238-3	PH04	83	99
LCS 880-37501/2-A	Lab Control Sample	97	120
LCSD 880-37501/3-A	Lab Control Sample Dup	96	116
MB 880-37501/1-A	Method Blank	90	108

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37517/5-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37517

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/21/22 14:22	10/25/22 11:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*10/21/22 14:22*	*10/25/22 11:26*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/21/22 14:22*	*10/25/22 11:26*	*1*

Lab Sample ID: MB 880-37678/5-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37678

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/24/22 13:20	10/25/22 23:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*10/24/22 13:20*	*10/25/22 23:00*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*10/24/22 13:20*	*10/25/22 23:00*	*1*

Lab Sample ID: LCS 880-37678/1-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37678

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	0.1057		mg/Kg		106	70 - 130		
Ethylbenzene			0.100	0.09437		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1930		mg/Kg		96	70 - 130		
o-Xylene			0.100	0.1024		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-37678/2-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09898		mg/Kg		99	70 - 130	1	35

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

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

Lab Sample ID: LCSD 880-37678/2-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1070		mg/Kg		107	70 - 130	1	35
Ethylbenzene			0.100	0.09688		mg/Kg		97	70 - 130	3	35
m-Xylene & p-Xylene			0.200	0.1994		mg/Kg		100	70 - 130	3	35
o-Xylene			0.100	0.1064		mg/Kg		106	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 880-20579-A-11-C MS
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.0998	0.1091		mg/Kg		109	70 - 130
Toluene	<0.00200	U F1 F2	0.0998	0.1041		mg/Kg		104	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.0998	0.07417		mg/Kg		74	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.200	0.1392		mg/Kg		70	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0998	0.08216		mg/Kg		82	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 880-20579-A-11-D MSD
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37678

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.101	0.002336	F1 F2	mg/Kg		2	70 - 130	192	35
Toluene	<0.00200	U F1 F2	0.101	0.004596	F1 F2	mg/Kg		5	70 - 130	183	35
Ethylbenzene	<0.00200	U F1 F2	0.101	0.004565	F1 F2	mg/Kg		5	70 - 130	177	35
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.201	0.01034	F1 F2	mg/Kg		5	70 - 130	172	35
o-Xylene	<0.00200	U F1 F2	0.101	0.005707	F1 F2	mg/Kg		6	70 - 130	174	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-37501/1-A
Matrix: Solid
Analysis Batch: 37440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37501

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		10/21/22 13:46	10/21/22 20:18	1

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QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

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

Lab Sample ID: MB 880-37501/1-A
Matrix: Solid
Analysis Batch: 37440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37501

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		10/21/22 13:46	10/21/22 20:18	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:46	10/21/22 20:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*10/21/22 13:46*	*10/21/22 20:18*	*1*
o-Terphenyl	*108*		*70 - 130*	*10/21/22 13:46*	*10/21/22 20:18*	*1*

Lab Sample ID: LCS 880-37501/2-A
Matrix: Solid
Analysis Batch: 37440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37501

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1112		mg/Kg		111	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1053		mg/Kg		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*120*		*70 - 130*

Lab Sample ID: LCSD 880-37501/3-A
Matrix: Solid
Analysis Batch: 37440

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37501

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	950.0		mg/Kg		95	70 - 130	16	20
Diesel Range Organics (Over C10-C28)			1000	1029		mg/Kg		103	70 - 130	2	20

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

Lab Sample ID: 890-3237-A-1-B MS
Matrix: Solid
Analysis Batch: 37440

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37501

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	1078		mg/Kg		105	70 - 130		
Diesel Range Organics (Over C10-C28)	133		998	1006		mg/Kg		87	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*84*		*70 - 130*
o-Terphenyl	*91*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

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

Lab Sample ID: 890-3237-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37440 — **Prep Batch: 37501**

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	1136		mg/Kg		111	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	133		998	1003		mg/Kg		87	70 - 130	0	20

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37510/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/23/22 16:51	1

Lab Sample ID: LCS 880-37510/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	258.4		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-37510/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	255.9		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 890-3236-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	403	F1	252	626.5	F1	mg/Kg		89	90 - 110		

Lab Sample ID: 890-3236-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37597

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	403	F1	252	629.1		mg/Kg		90	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

GC VOA

Prep Batch: 37517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-37517/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 37678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Total/NA	Solid	5035	
890-3238-2	PH04	Total/NA	Solid	5035	
890-3238-3	PH04	Total/NA	Solid	5035	
MB 880-37678/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37678/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37678/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20579-A-11-C MS	Matrix Spike	Total/NA	Solid	5035	
880-20579-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Total/NA	Solid	8021B	37678
890-3238-2	PH04	Total/NA	Solid	8021B	37678
890-3238-3	PH04	Total/NA	Solid	8021B	37678
MB 880-37517/5-A	Method Blank	Total/NA	Solid	8021B	37517
MB 880-37678/5-A	Method Blank	Total/NA	Solid	8021B	37678
LCS 880-37678/1-A	Lab Control Sample	Total/NA	Solid	8021B	37678
LCSD 880-37678/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37678
880-20579-A-11-C MS	Matrix Spike	Total/NA	Solid	8021B	37678
880-20579-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37678

Analysis Batch: 37869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Total/NA	Solid	Total BTEX	
890-3238-2	PH04	Total/NA	Solid	Total BTEX	
890-3238-3	PH04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Total/NA	Solid	8015B NM	37501
890-3238-2	PH04	Total/NA	Solid	8015B NM	37501
890-3238-3	PH04	Total/NA	Solid	8015B NM	37501
MB 880-37501/1-A	Method Blank	Total/NA	Solid	8015B NM	37501
LCS 880-37501/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37501
LCSD 880-37501/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37501
890-3237-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	37501
890-3237-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37501

Prep Batch: 37501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Total/NA	Solid	8015NM Prep	
890-3238-2	PH04	Total/NA	Solid	8015NM Prep	
890-3238-3	PH04	Total/NA	Solid	8015NM Prep	
MB 880-37501/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37501/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

GC Semi VOA (Continued)

Prep Batch: 37501 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-37501/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3237-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3237-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Total/NA	Solid	8015 NM	
890-3238-2	PH04	Total/NA	Solid	8015 NM	
890-3238-3	PH04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Soluble	Solid	DI Leach	
890-3238-2	PH04	Soluble	Solid	DI Leach	
890-3238-3	PH04	Soluble	Solid	DI Leach	
MB 880-37510/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37510/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37510/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3236-A-1-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3236-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3238-1	PH04	Soluble	Solid	300.0	37510
890-3238-2	PH04	Soluble	Solid	300.0	37510
890-3238-3	PH04	Soluble	Solid	300.0	37510
MB 880-37510/1-A	Method Blank	Soluble	Solid	300.0	37510
LCS 880-37510/2-A	Lab Control Sample	Soluble	Solid	300.0	37510
LCSD 880-37510/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37510
890-3236-A-1-C MS	Matrix Spike	Soluble	Solid	300.0	37510
890-3236-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37510

Lab Chronicle

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Client Sample ID: PH04
Date Collected: 10/19/22 10:00
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3238-1
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			5.03 g	5 mL	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 04:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37869	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37667	10/24/22 12:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37501	10/21/22 13:46	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37440	10/22/22 03:27	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	37510	10/21/22 14:10	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	37597	10/23/22 17:59	CH	EET MID

Client Sample ID: PH04
Date Collected: 10/19/22 10:15
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3238-2
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			4.99 g	5 mL	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 05:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37869	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37667	10/24/22 12:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37501	10/21/22 13:46	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37440	10/22/22 03:49	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	37510	10/21/22 14:10	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	37597	10/23/22 18:04	CH	EET MID

Client Sample ID: PH04
Date Collected: 10/19/22 10:30
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3238-3
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	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 05:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37869	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37667	10/24/22 12:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37501	10/21/22 13:46	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37440	10/22/22 04:11	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	37510	10/21/22 14:10	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37597	10/23/22 18:09	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

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: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

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: Elivis Injection Line

Job ID: 890-3238-1
SDG: 03D2057011

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3238-1	PH04	Solid	10/19/22 10:00	10/20/22 09:38	1
890-3238-2	PH04	Solid	10/19/22 10:15	10/20/22 09:38	2
890-3238-3	PH04	Solid	10/19/22 10:30	10/20/22 09:38	6

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Chain of Custody

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

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Work Order No: _____

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:	Email:	kjennings@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:	Elvis Injection Line	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2057011	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Conner Shore		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TAM007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.8
Total Containers:		Corrected Temperature:	3.6

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH04	S	10.19.22	1000	1'	G	1		X	X	X
PH04	S	10.19.22	1015	2'	G	1		X	X	X
PH04	S	10.19.22	1030	6'	G	1		X	X	X

ANALYSIS REQUEST

890-3238 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

Incident Number

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 Stuyt	10/20/22 938			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3238-1
SDG Number: 03D2057011

Login Number: 3238
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3238-1
SDG Number: 03D2057011

Login Number: 3238
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/21/22 10:46 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3240-1
Laboratory Sample Delivery Group: 03D2057011
Client Project/Site: Elvis Injection Line

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/26/2022 9:12:52 AM

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

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

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

Client: Ensolum
Project/Site: Elvis Injection Line

Laboratory Job ID: 890-3240-1
SDG: 03D2057011

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Job ID: 890-3240-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3240-1

Receipt
The samples were received on 10/20/2022 9:38 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH02 (890-3240-1), PH02 (890-3240-2) and PH02 (890-3240-3).

GC VOA
Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-20579-A-11-D MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-37503 and analytical batch 880-37444 was outside the upper control limits.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37511 and analytical batch 880-37598 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: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Client Sample ID: PH02

Date Collected: 10/19/22 09:05
Date Received: 10/20/22 09:38
Sample Depth: 1

Lab Sample ID: 890-3240-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 05:44	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 05:44	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 05:44	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/24/22 13:20	10/26/22 05:44	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 05:44	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/24/22 13:20	10/26/22 05:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*10/24/22 13:20*	*10/26/22 05:44*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*10/24/22 13:20*	*10/26/22 05:44*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/26/22 09:33	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			10/24/22 09:48	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	<49.8	U	49.8		mg/Kg		10/21/22 13:50	10/21/22 20:52	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		10/21/22 13:50	10/21/22 20:52	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		10/21/22 13:50	10/21/22 20:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*10/21/22 13:50*	*10/21/22 20:52*	*1*
o-Terphenyl	*89*		*70 - 130*	*10/21/22 13:50*	*10/21/22 20:52*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**165**		5.03		mg/Kg			10/23/22 20:35	1

Client Sample ID: PH02

Date Collected: 10/19/22 09:25
Date Received: 10/20/22 09:38
Sample Depth: 5

Lab Sample ID: 890-3240-2
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		10/24/22 13:20	10/26/22 06:04	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/24/22 13:20	10/26/22 06:04	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/24/22 13:20	10/26/22 06:04	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/24/22 13:20	10/26/22 06:04	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/24/22 13:20	10/26/22 06:04	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/24/22 13:20	10/26/22 06:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*10/24/22 13:20*	*10/26/22 06:04*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Client Sample ID: PH02

Date Collected: 10/19/22 09:25
Date Received: 10/20/22 09:38
Sample Depth: 5

Lab Sample ID: 890-3240-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*10/24/22 13:20*	*10/26/22 06:04*	*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 09:33	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			10/24/22 09:48	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	49.9	mg/Kg		10/21/22 13:50	10/21/22 21:53	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/21/22 13:50	10/21/22 21:53	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/21/22 13:50	10/21/22 21:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*10/21/22 13:50*	*10/21/22 21:53*	*1*
o-Terphenyl	*104*		*70 - 130*	*10/21/22 13:50*	*10/21/22 21:53*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8760**		50.0	mg/Kg			10/23/22 20:39	10

Client Sample ID: PH02

Date Collected: 10/19/22 09:40
Date Received: 10/20/22 09:38
Sample Depth: 12

Lab Sample ID: 890-3240-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 06:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 06:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 06:24	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/24/22 13:20	10/26/22 06:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/24/22 13:20	10/26/22 06:24	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/24/22 13:20	10/26/22 06:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*10/24/22 13:20*	*10/26/22 06:24*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*10/24/22 13:20*	*10/26/22 06:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/26/22 09:33	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			10/24/22 09:48	1

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Client Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Client Sample ID: PH02

Date Collected: 10/19/22 09:40
Date Received: 10/20/22 09:38
Sample Depth: 12

Lab Sample ID: 890-3240-3

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	<49.8	U	49.8		mg/Kg		10/21/22 13:50	10/21/22 22:14	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		10/21/22 13:50	10/21/22 22:14	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		10/21/22 13:50	10/21/22 22:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*10/21/22 13:50*	*10/21/22 22:14*	*1*
o-Terphenyl	*96*		*70 - 130*	*10/21/22 13:50*	*10/21/22 22:14*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1120**		4.96		mg/Kg			10/23/22 20:44	1

Surrogate Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

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)
880-20579-A-11-C MS	Matrix Spike	89	99
880-20579-A-11-D MSD	Matrix Spike Duplicate	97	105
890-3240-1	PH02	103	100
890-3240-2	PH02	101	102
890-3240-3	PH02	99	97
LCS 880-37678/1-A	Lab Control Sample	92	101
LCSD 880-37678/2-A	Lab Control Sample Dup	94	96
MB 880-37517/5-A	Method Blank	109	105
MB 880-37678/5-A	Method Blank	108	106

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)
890-3240-1	PH02	77	89
890-3240-2	PH02	93	104
890-3240-2 MS	PH02	82	84
890-3240-2 MSD	PH02	79	81
890-3240-3	PH02	83	96
LCS 880-37503/2-A	Lab Control Sample	90	100
LCSD 880-37503/3-A	Lab Control Sample Dup	99	110
MB 880-37503/1-A	Method Blank	118	133 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37517/5-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37517

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/21/22 14:22	10/25/22 11:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*10/21/22 14:22*	*10/25/22 11:26*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/21/22 14:22*	*10/25/22 11:26*	*1*

Lab Sample ID: MB 880-37678/5-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37678

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/24/22 13:20	10/25/22 23:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*10/24/22 13:20*	*10/25/22 23:00*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*10/24/22 13:20*	*10/25/22 23:00*	*1*

Lab Sample ID: LCS 880-37678/1-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37678

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	0.1057		mg/Kg		106	70 - 130		
Ethylbenzene			0.100	0.09437		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1930		mg/Kg		96	70 - 130		
o-Xylene			0.100	0.1024		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-37678/2-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09898		mg/Kg		99	70 - 130	1	35

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

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

Lab Sample ID: LCSD 880-37678/2-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1070		mg/Kg		107	70 - 130	1	35
Ethylbenzene			0.100	0.09688		mg/Kg		97	70 - 130	3	35
m-Xylene & p-Xylene			0.200	0.1994		mg/Kg		100	70 - 130	3	35
o-Xylene			0.100	0.1064		mg/Kg		106	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 880-20579-A-11-C MS
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37678

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.0998	0.1091		mg/Kg		109	70 - 130
Toluene	<0.00200	U F1 F2	0.0998	0.1041		mg/Kg		104	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.0998	0.07417		mg/Kg		74	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.200	0.1392		mg/Kg		70	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0998	0.08216		mg/Kg		82	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 880-20579-A-11-D MSD
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37678

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.101	0.002336	F1 F2	mg/Kg		2	70 - 130	192	35
Toluene	<0.00200	U F1 F2	0.101	0.004596	F1 F2	mg/Kg		5	70 - 130	183	35
Ethylbenzene	<0.00200	U F1 F2	0.101	0.004565	F1 F2	mg/Kg		5	70 - 130	177	35
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.201	0.01034	F1 F2	mg/Kg		5	70 - 130	172	35
o-Xylene	<0.00200	U F1 F2	0.101	0.005707	F1 F2	mg/Kg		6	70 - 130	174	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-37503/1-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37503

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		10/21/22 13:50	10/21/22 19:50	1

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

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

Lab Sample ID: MB 880-37503/1-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37503

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		10/21/22 13:50	10/21/22 19:50	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:50	10/21/22 19:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*10/21/22 13:50*	*10/21/22 19:50*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*10/21/22 13:50*	*10/21/22 19:50*	*1*

Lab Sample ID: LCS 880-37503/2-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37503

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	858.1		mg/Kg		86	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	774.2		mg/Kg		77	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Lab Sample ID: LCSD 880-37503/3-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37503

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1041		mg/Kg		104	70 - 130	19	20
Diesel Range Organics (Over C10-C28)			1000	902.2		mg/Kg		90	70 - 130	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: 890-3240-2 MS
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: PH02
Prep Type: Total/NA
Prep Batch: 37503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	1086		mg/Kg		109	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	781.6		mg/Kg		76	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*82*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

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

Lab Sample ID: 890-3240-2 MSD — **Client Sample ID: PH02**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37503**

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	<49.9	U	998	1014		mg/Kg		102	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	762.1		mg/Kg		74	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*79*		*70 - 130*
o-Terphenyl	*81*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/23/22 19:22	1

Lab Sample ID: LCS 880-37511/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	259.6		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-37511/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	259.0		mg/Kg		104	90 - 110	0	20

Lab Sample ID: 890-3240-3 MS — **Client Sample ID: PH02**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1120		248	1334	4	mg/Kg		87	90 - 110		

Lab Sample ID: 890-3240-3 MSD — **Client Sample ID: PH02**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1120		248	1329	4	mg/Kg		85	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

GC VOA

Prep Batch: 37517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-37517/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 37678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Total/NA	Solid	5035	
890-3240-2	PH02	Total/NA	Solid	5035	
890-3240-3	PH02	Total/NA	Solid	5035	
MB 880-37678/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37678/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37678/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20579-A-11-C MS	Matrix Spike	Total/NA	Solid	5035	
880-20579-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Total/NA	Solid	8021B	37678
890-3240-2	PH02	Total/NA	Solid	8021B	37678
890-3240-3	PH02	Total/NA	Solid	8021B	37678
MB 880-37517/5-A	Method Blank	Total/NA	Solid	8021B	37517
MB 880-37678/5-A	Method Blank	Total/NA	Solid	8021B	37678
LCS 880-37678/1-A	Lab Control Sample	Total/NA	Solid	8021B	37678
LCSD 880-37678/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37678
880-20579-A-11-C MS	Matrix Spike	Total/NA	Solid	8021B	37678
880-20579-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37678

Analysis Batch: 37870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Total/NA	Solid	Total BTEX	
890-3240-2	PH02	Total/NA	Solid	Total BTEX	
890-3240-3	PH02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Total/NA	Solid	8015B NM	37503
890-3240-2	PH02	Total/NA	Solid	8015B NM	37503
890-3240-3	PH02	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-2 MS	PH02	Total/NA	Solid	8015B NM	37503
890-3240-2 MSD	PH02	Total/NA	Solid	8015B NM	37503

Prep Batch: 37503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Total/NA	Solid	8015NM Prep	
890-3240-2	PH02	Total/NA	Solid	8015NM Prep	
890-3240-3	PH02	Total/NA	Solid	8015NM Prep	
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

GC Semi VOA (Continued)

Prep Batch: 37503 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-2 MS	PH02	Total/NA	Solid	8015NM Prep	
890-3240-2 MSD	PH02	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Total/NA	Solid	8015 NM	
890-3240-2	PH02	Total/NA	Solid	8015 NM	
890-3240-3	PH02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Soluble	Solid	DI Leach	
890-3240-2	PH02	Soluble	Solid	DI Leach	
890-3240-3	PH02	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3240-3 MS	PH02	Soluble	Solid	DI Leach	
890-3240-3 MSD	PH02	Soluble	Solid	DI Leach	

Analysis Batch: 37598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3240-1	PH02	Soluble	Solid	300.0	37511
890-3240-2	PH02	Soluble	Solid	300.0	37511
890-3240-3	PH02	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3240-3 MS	PH02	Soluble	Solid	300.0	37511
890-3240-3 MSD	PH02	Soluble	Solid	300.0	37511

Lab Chronicle

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Client Sample ID: PH02
Date Collected: 10/19/22 09:05
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3240-1
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			5.02 g	5 mL	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 05:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37870	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37627	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 20:52	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 20:35	CH	EET MID

Client Sample ID: PH02
Date Collected: 10/19/22 09:25
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3240-2
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	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 06:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37870	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37627	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 21:53	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	37598	10/23/22 20:39	CH	EET MID

Client Sample ID: PH02
Date Collected: 10/19/22 09:40
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3240-3
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	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 06:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37870	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37627	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 22:14	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 20:44	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

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: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

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: Elvis Injection Line

Job ID: 890-3240-1
SDG: 03D2057011

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3240-1	PH02	Solid	10/19/22 09:05	10/20/22 09:38	1
890-3240-2	PH02	Solid	10/19/22 09:25	10/20/22 09:38	5
890-3240-3	PH02	Solid	10/19/22 09:40	10/20/22 09:38	12

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Chain of Custody

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

Work Order No: _____

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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:	Email:	kjennings@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:	Elvis Injection Line	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2057011	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Conner Shore		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	3.8
Total Containers:		Corrected Temperature:	3.6

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

890-3240 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
PH02	S	10.19.22	905	1'	G	1		X	X	X
PH02	S	10.19.22	925	5'	G	1		X	X	X
PH02	S	10.19.22	940	12'	G	1		X	X	X

Sample Comments

Incident Number

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	Amanda Salt	10/26/22 938	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3240-1
SDG Number: 03D2057011

Login Number: 3240
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: 890-3240-1
SDG Number: 03D2057011

Login Number: 3240
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/21/22 10:46 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3241-1
Laboratory Sample Delivery Group: 03D2057011
Client Project/Site: Elvis Injection Line

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/26/2022 9:12:52 AM

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

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

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

Client: Ensolum
Project/Site: Elvis Injection Line

Laboratory Job ID: 890-3241-1
SDG: 03D2057011

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Job ID: 890-3241-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3241-1

Receipt
The samples were received on 10/20/2022 9:38 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH01 (890-3241-1), PH01 (890-3241-2) and PH01 (890-3241-3).

GC VOA
Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-20579-A-11-D MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-37503 and analytical batch 880-37444 was outside the upper control limits.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37511 and analytical batch 880-37598 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: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Client Sample ID: PH01

Date Collected: 10/19/22 09:00
Date Received: 10/20/22 09:38
Sample Depth: 1

Lab Sample ID: 890-3241-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 06:45	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 06:45	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 06:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/24/22 13:20	10/26/22 06:45	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/24/22 13:20	10/26/22 06:45	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/24/22 13:20	10/26/22 06:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*10/24/22 13:20*	*10/26/22 06:45*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*10/24/22 13:20*	*10/26/22 06:45*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/26/22 09:33	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			10/24/22 09:48	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	49.9		mg/Kg		10/21/22 13:50	10/21/22 22:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/21/22 22:35	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/21/22 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*10/21/22 13:50*	*10/21/22 22:35*	*1*
o-Terphenyl	*95*		*70 - 130*	*10/21/22 13:50*	*10/21/22 22:35*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**242**		5.05		mg/Kg			10/23/22 20:59	1

Client Sample ID: PH01

Date Collected: 10/19/22 09:15
Date Received: 10/20/22 09:38
Sample Depth: 5

Lab Sample ID: 890-3241-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 07:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 07:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 07:05	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/24/22 13:20	10/26/22 07:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/26/22 07:05	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/24/22 13:20	10/26/22 07:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*10/24/22 13:20*	*10/26/22 07:05*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Client Sample ID: PH01

Date Collected: 10/19/22 09:15
Date Received: 10/20/22 09:38
Sample Depth: 5

Lab Sample ID: 890-3241-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*10/24/22 13:20*	*10/26/22 07:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/26/22 09:33	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			10/24/22 09:48	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	49.9	mg/Kg		10/21/22 13:50	10/21/22 22:55	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/21/22 13:50	10/21/22 22:55	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/21/22 13:50	10/21/22 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*10/21/22 13:50*	*10/21/22 22:55*	*1*
o-Terphenyl	*101*		*70 - 130*	*10/21/22 13:50*	*10/21/22 22:55*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6410**		50.2	mg/Kg			10/23/22 21:04	10

Client Sample ID: PH01

Date Collected: 10/19/22 09:30
Date Received: 10/20/22 09:38
Sample Depth: 13

Lab Sample ID: 890-3241-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/24/22 13:20	10/26/22 07:26	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/24/22 13:20	10/26/22 07:26	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/24/22 13:20	10/26/22 07:26	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/24/22 13:20	10/26/22 07:26	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/24/22 13:20	10/26/22 07:26	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/24/22 13:20	10/26/22 07:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*10/24/22 13:20*	*10/26/22 07:26*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*10/24/22 13:20*	*10/26/22 07:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/26/22 09:33	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			10/24/22 09:48	1

Client Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Client Sample ID: PH01

Date Collected: 10/19/22 09:30
Date Received: 10/20/22 09:38
Sample Depth: 13

Lab Sample ID: 890-3241-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/21/22 23:16	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/21/22 23:16	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/21/22 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*10/21/22 13:50*	*10/21/22 23:16*	*1*
o-Terphenyl	*96*		*70 - 130*	*10/21/22 13:50*	*10/21/22 23:16*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**787**		5.04		mg/Kg			10/23/22 21:18	1

Surrogate Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

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)
880-20579-A-11-C MS	Matrix Spike	89	99
880-20579-A-11-D MSD	Matrix Spike Duplicate	97	105
890-3241-1	PH01	115	99
890-3241-2	PH01	91	102
890-3241-3	PH01	108	97
LCS 880-37678/1-A	Lab Control Sample	92	101
LCSD 880-37678/2-A	Lab Control Sample Dup	94	96
MB 880-37517/5-A	Method Blank	109	105
MB 880-37678/5-A	Method Blank	108	106

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)
890-3240-A-2-C MS	Matrix Spike	82	84
890-3240-A-2-D MSD	Matrix Spike Duplicate	79	81
890-3241-1	PH01	82	95
890-3241-2	PH01	88	101
890-3241-3	PH01	84	96
LCS 880-37503/2-A	Lab Control Sample	90	100
LCSD 880-37503/3-A	Lab Control Sample Dup	99	110
MB 880-37503/1-A	Method Blank	118	133 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37517/5-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37517

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:22	10/25/22 11:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/21/22 14:22	10/25/22 11:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*10/21/22 14:22*	*10/25/22 11:26*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/21/22 14:22*	*10/25/22 11:26*	*1*

Lab Sample ID: MB 880-37678/5-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37678

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/24/22 13:20	10/25/22 23:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/24/22 13:20	10/25/22 23:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*10/24/22 13:20*	*10/25/22 23:00*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*10/24/22 13:20*	*10/25/22 23:00*	*1*

Lab Sample ID: LCS 880-37678/1-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37678

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	0.1057		mg/Kg		106	70 - 130		
Ethylbenzene			0.100	0.09437		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1930		mg/Kg		96	70 - 130		
o-Xylene			0.100	0.1024		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-37678/2-A
Matrix: Solid
Analysis Batch: 37728

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37678

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09898		mg/Kg		99	70 - 130	1	35

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

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

Lab Sample ID: LCSD 880-37678/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37728 — **Prep Batch: 37678**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1070		mg/Kg		107	70 - 130	1	35
Ethylbenzene			0.100	0.09688		mg/Kg		97	70 - 130	3	35
m-Xylene & p-Xylene			0.200	0.1994		mg/Kg		100	70 - 130	3	35
o-Xylene			0.100	0.1064		mg/Kg		106	70 - 130	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 880-20579-A-11-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37728 — **Prep Batch: 37678**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.0998	0.1091		mg/Kg		109	70 - 130
Toluene	<0.00200	U F1 F2	0.0998	0.1041		mg/Kg		104	70 - 130
Ethylbenzene	<0.00200	U F1 F2	0.0998	0.07417		mg/Kg		74	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.200	0.1392		mg/Kg		70	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0998	0.08216		mg/Kg		82	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 880-20579-A-11-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37728 — **Prep Batch: 37678**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.101	0.002336	F1 F2	mg/Kg		2	70 - 130	192	35
Toluene	<0.00200	U F1 F2	0.101	0.004596	F1 F2	mg/Kg		5	70 - 130	183	35
Ethylbenzene	<0.00200	U F1 F2	0.101	0.004565	F1 F2	mg/Kg		5	70 - 130	177	35
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.201	0.01034	F1 F2	mg/Kg		5	70 - 130	172	35
o-Xylene	<0.00200	U F1 F2	0.101	0.005707	F1 F2	mg/Kg		6	70 - 130	174	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-37503/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37503**

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		10/21/22 13:50	10/21/22 19:50	1

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

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

Lab Sample ID: MB 880-37503/1-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37503

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		10/21/22 13:50	10/21/22 19:50	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:50	10/21/22 19:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*10/21/22 13:50*	*10/21/22 19:50*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*10/21/22 13:50*	*10/21/22 19:50*	*1*

Lab Sample ID: LCS 880-37503/2-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37503

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	858.1		mg/Kg		86	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	774.2		mg/Kg		77	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Lab Sample ID: LCSD 880-37503/3-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37503

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1041		mg/Kg		104	70 - 130	19	20
Diesel Range Organics (Over C10-C28)			1000	902.2		mg/Kg		90	70 - 130	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: 890-3240-A-2-C MS
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	1086		mg/Kg		109	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	781.6		mg/Kg		76	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*82*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

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

Lab Sample ID: 890-3240-A-2-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37503**

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	<49.9	U	998	1014		mg/Kg		102	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	762.1		mg/Kg		74	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*79*		*70 - 130*
o-Terphenyl	*81*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/23/22 19:22	1

Lab Sample ID: LCS 880-37511/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	259.6		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-37511/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	259.0		mg/Kg		104	90 - 110	0	20

Lab Sample ID: 890-3240-A-3-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1120		248	1334	4	mg/Kg		87	90 - 110		

Lab Sample ID: 890-3240-A-3-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1120		248	1329	4	mg/Kg		85	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

GC VOA

Prep Batch: 37517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-37517/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 37678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Total/NA	Solid	5035	
890-3241-2	PH01	Total/NA	Solid	5035	
890-3241-3	PH01	Total/NA	Solid	5035	
MB 880-37678/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37678/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37678/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20579-A-11-C MS	Matrix Spike	Total/NA	Solid	5035	
880-20579-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Total/NA	Solid	8021B	37678
890-3241-2	PH01	Total/NA	Solid	8021B	37678
890-3241-3	PH01	Total/NA	Solid	8021B	37678
MB 880-37517/5-A	Method Blank	Total/NA	Solid	8021B	37517
MB 880-37678/5-A	Method Blank	Total/NA	Solid	8021B	37678
LCS 880-37678/1-A	Lab Control Sample	Total/NA	Solid	8021B	37678
LCSD 880-37678/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37678
880-20579-A-11-C MS	Matrix Spike	Total/NA	Solid	8021B	37678
880-20579-A-11-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37678

Analysis Batch: 37871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Total/NA	Solid	Total BTEX	
890-3241-2	PH01	Total/NA	Solid	Total BTEX	
890-3241-3	PH01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Total/NA	Solid	8015B NM	37503
890-3241-2	PH01	Total/NA	Solid	8015B NM	37503
890-3241-3	PH01	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37503
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37503

Prep Batch: 37503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Total/NA	Solid	8015NM Prep	
890-3241-2	PH01	Total/NA	Solid	8015NM Prep	
890-3241-3	PH01	Total/NA	Solid	8015NM Prep	
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

GC Semi VOA (Continued)

Prep Batch: 37503 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Total/NA	Solid	8015 NM	
890-3241-2	PH01	Total/NA	Solid	8015 NM	
890-3241-3	PH01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Soluble	Solid	DI Leach	
890-3241-2	PH01	Soluble	Solid	DI Leach	
890-3241-3	PH01	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3241-1	PH01	Soluble	Solid	300.0	37511
890-3241-2	PH01	Soluble	Solid	300.0	37511
890-3241-3	PH01	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511

Lab Chronicle

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Client Sample ID: PH01
Date Collected: 10/19/22 09:00
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3241-1
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			5.03 g	5 mL	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 06:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37871	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37628	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 22:35	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 20:59	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/19/22 09:15
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3241-2
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			5.01 g	5 mL	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 07:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37871	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37628	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 22:55	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	37598	10/23/22 21:04	CH	EET MID

Client Sample ID: PH01
Date Collected: 10/19/22 09:30
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3241-3
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			5.02 g	5 mL	37678	10/24/22 13:20	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37728	10/26/22 07:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37871	10/26/22 09:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			37628	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 23:16	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 21:18	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: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

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: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

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: Elvis Injection Line

Job ID: 890-3241-1
SDG: 03D2057011

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3241-1	PH01	Solid	10/19/22 09:00	10/20/22 09:38	1
890-3241-2	PH01	Solid	10/19/22 09:15	10/20/22 09:38	5
890-3241-3	PH01	Solid	10/19/22 09:30	10/20/22 09:38	13

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Chain of Custody

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

Work Order No: _____

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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:	Email:		kjennings@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:	Elvis Injection Line	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2057011	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Conner Shore		
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:	3.8	
Total Containers:		Corrected Temperature:	3.6	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH01	S	10.19.22	900	1'	G	1		X	X	X
PH01	S	10.19.22	915	5'	G	1		X	X	X
PH01	S	10.19.22	930	13'	G	1		X	X	X

ANALYSIS REQUEST

890-3241 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

Incident Number

10.19.22

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 Salazar	10/20/22 938			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3241-1
SDG Number: 03D2057011

Login Number: 3241
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: 890-3241-1
SDG Number: 03D2057011

Login Number: 3241
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/21/22 10:46 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	

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ANALYTICAL REPORT

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

Laboratory Job ID: 890-3242-1
Laboratory Sample Delivery Group: 03D2057011
Client Project/Site: Elvis Injection Line

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
10/31/2022 9:38:06 AM

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

Client: Ensolum
Project/Site: Elvis Injection Line

Laboratory Job ID: 890-3242-1
SDG: 03D2057011

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Job ID: 890-3242-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3242-1

Receipt
The samples were received on 10/20/2022 9:58 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: PH03 (890-3242-1), PH03 (890-3242-2) and PH03 (890-3242-3).

GC VOA
Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control limits.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-37503 and analytical batch 880-37444 was outside the upper control limits.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37511 and analytical batch 880-37598 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: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Client Sample ID: PH03

Lab Sample ID: 890-3242-1
Matrix: Solid
Date Collected: 10/19/22 12:00
Date Received: 10/20/22 09:58
Sample Depth: 1'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:15	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:15	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:15	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 02:15	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:15	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 02:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*10/26/22 14:13*	*10/29/22 02:15*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*10/26/22 14:13*	*10/29/22 02:15*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/30/22 21:36	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			10/24/22 09:48	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	50.0		mg/Kg		10/21/22 13:50	10/21/22 23:36	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/21/22 13:50	10/21/22 23:36	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:50	10/21/22 23:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*10/21/22 13:50*	*10/21/22 23:36*	*1*
o-Terphenyl	*86*		*70 - 130*	*10/21/22 13:50*	*10/21/22 23:36*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1260**		25.2		mg/Kg			10/23/22 21:23	5

Client Sample ID: PH03

Lab Sample ID: 890-3242-2
Matrix: Solid
Date Collected: 10/19/22 12:15
Date Received: 10/20/22 09:58
Sample Depth: 8'

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:36	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:36	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:36	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 02:36	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/26/22 14:13	10/29/22 02:36	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/26/22 14:13	10/29/22 02:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*10/26/22 14:13*	*10/29/22 02:36*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Client Sample ID: PH03
Date Collected: 10/19/22 12:15
Date Received: 10/20/22 09:58
Sample Depth: 8'

Lab Sample ID: 890-3242-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*10/26/22 14:13*	*10/29/22 02:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/30/22 21:36	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			10/24/22 09:48	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	50.0	mg/Kg		10/21/22 13:50	10/21/22 23:57	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 23:57	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 23:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*10/21/22 13:50*	*10/21/22 23:57*	*1*
o-Terphenyl	*101*		*70 - 130*	*10/21/22 13:50*	*10/21/22 23:57*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4810**		24.9	mg/Kg			10/23/22 21:28	5

Client Sample ID: PH03
Date Collected: 10/19/22 12:30
Date Received: 10/20/22 09:58
Sample Depth: 15'

Lab Sample ID: 890-3242-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 02:56	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 02:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 02:56	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/26/22 14:13	10/29/22 02:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 02:56	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/26/22 14:13	10/29/22 02:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*10/26/22 14:13*	*10/29/22 02:56*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*10/26/22 14:13*	*10/29/22 02:56*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/30/22 21:36	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			10/24/22 09:48	1

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Client Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Client Sample ID: PH03

Date Collected: 10/19/22 12:30
Date Received: 10/20/22 09:58
Sample Depth: 15'

Lab Sample ID: 890-3242-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/22/22 00:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/22/22 00:18	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/21/22 13:50	10/22/22 00:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*10/21/22 13:50*	*10/22/22 00:18*	*1*
o-Terphenyl	*95*		*70 - 130*	*10/21/22 13:50*	*10/22/22 00:18*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4020**		50.4		mg/Kg			10/23/22 21:33	10

Surrogate Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

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)										
880-20605-A-1-E MS	Matrix Spike	101	92										
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90										
890-3242-1	PH03	118	94										
890-3242-2	PH03	129	93										
890-3242-3	PH03	117	91										
LCS 880-37911/1-A	Lab Control Sample	99	91										
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91										
MB 880-37911/5-A	Method Blank	102	87										
MB 880-38021/5-A	Method Blank	72	60 S1-										

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)										
890-3240-A-2-C MS	Matrix Spike	82	84										
890-3240-A-2-D MSD	Matrix Spike Duplicate	79	81										
890-3242-1	PH03	75	86										
890-3242-2	PH03	87	101										
890-3242-3	PH03	83	95										
LCS 880-37503/2-A	Lab Control Sample	90	100										
LCSD 880-37503/3-A	Lab Control Sample Dup	99	110										
MB 880-37503/1-A	Method Blank	118	133 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37911

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/26/22 14:13	10/29/22 01:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/26/22 14:13*	*10/29/22 01:12*	*1*

Lab Sample ID: LCS 880-37911/1-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07484		mg/Kg		75	70 - 130		
Toluene			0.100	0.07671		mg/Kg		77	70 - 130		
Ethylbenzene			0.100	0.07425		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1480		mg/Kg		74	70 - 130		
o-Xylene			0.100	0.08609		mg/Kg		86	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: LCSD 880-37911/2-A
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37911

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene			0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene			0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene			0.100	0.08950		mg/Kg		89	70 - 130	4	35

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

Lab Sample ID: 880-20605-A-1-E MS
Matrix: Solid
Analysis Batch: 38089

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130		
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

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

Lab Sample ID: 880-20605-A-1-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-20605-A-1-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 37911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F1	0.0990	0.06610	F1	mg/Kg		66	70 - 130	20	35
Toluene	<0.00201	U F1	0.0990	0.06481	F1	mg/Kg		65	70 - 130	20	35
Ethylbenzene	<0.00201	U F1	0.0990	0.06337	F1	mg/Kg		64	70 - 130	19	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.1224	F1	mg/Kg		62	70 - 130	16	35
o-Xylene	<0.00201	U	0.0990	0.07052		mg/Kg		71	70 - 130	17	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: MB 880-38021/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38089 — **Prep Batch: 38021**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*
1,4-Difluorobenzene (Surr)	*60*	*S1-*	*70 - 130*	*10/27/22 13:34*	*10/28/22 13:48*	*1*

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

Lab Sample ID: MB 880-37503/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37503**

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		10/21/22 13:50	10/21/22 19:50	1

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QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

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

Lab Sample ID: MB 880-37503/1-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37503

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		10/21/22 13:50	10/21/22 19:50	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/21/22 13:50	10/21/22 19:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*10/21/22 13:50*	*10/21/22 19:50*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*10/21/22 13:50*	*10/21/22 19:50*	*1*

Lab Sample ID: LCS 880-37503/2-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37503

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	858.1		mg/Kg		86	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	774.2		mg/Kg		77	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Lab Sample ID: LCSD 880-37503/3-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37503

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1041		mg/Kg		104	70 - 130	19	20
Diesel Range Organics (Over C10-C28)			1000	902.2		mg/Kg		90	70 - 130	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: 890-3240-A-2-C MS
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37503

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	1086		mg/Kg		109	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	998	781.6		mg/Kg		76	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*82*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

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

Lab Sample ID: 890-3240-A-2-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37503**

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	<49.9	U	998	1014		mg/Kg		102	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	762.1		mg/Kg		74	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*79*		*70 - 130*
o-Terphenyl	*81*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/23/22 19:22	1

Lab Sample ID: LCS 880-37511/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	259.6		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-37511/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	259.0		mg/Kg		104	90 - 110	0	20

Lab Sample ID: 890-3239-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1220		1240	2517		mg/Kg		105	90 - 110		

Lab Sample ID: 890-3239-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 37598

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1220		1240	2519		mg/Kg		105	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3240-A-3-C MS
Matrix: Solid
Analysis Batch: 37598

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	1120		248	1334	4	mg/Kg		87	90 - 110		

Lab Sample ID: 890-3240-A-3-D MSD
Matrix: Solid
Analysis Batch: 37598

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	1120		248	1329	4	mg/Kg		85	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Total/NA	Solid	5035	
890-3242-2	PH03	Total/NA	Solid	5035	
890-3242-3	PH03	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Total/NA	Solid	8021B	37911
890-3242-2	PH03	Total/NA	Solid	8021B	37911
890-3242-3	PH03	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Total/NA	Solid	Total BTEX	
890-3242-2	PH03	Total/NA	Solid	Total BTEX	
890-3242-3	PH03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Total/NA	Solid	8015B NM	37503
890-3242-2	PH03	Total/NA	Solid	8015B NM	37503
890-3242-3	PH03	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37503
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37503

Prep Batch: 37503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Total/NA	Solid	8015NM Prep	
890-3242-2	PH03	Total/NA	Solid	8015NM Prep	
890-3242-3	PH03	Total/NA	Solid	8015NM Prep	
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

GC Semi VOA (Continued)

Prep Batch: 37503 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Total/NA	Solid	8015 NM	
890-3242-2	PH03	Total/NA	Solid	8015 NM	
890-3242-3	PH03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Soluble	Solid	DI Leach	
890-3242-2	PH03	Soluble	Solid	DI Leach	
890-3242-3	PH03	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3239-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3239-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3242-1	PH03	Soluble	Solid	300.0	37511
890-3242-2	PH03	Soluble	Solid	300.0	37511
890-3242-3	PH03	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3239-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3239-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511

Lab Chronicle

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Client Sample ID: PH03

Date Collected: 10/19/22 12:00
Date Received: 10/20/22 09:58

Lab Sample ID: 890-3242-1

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			5.03 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 02:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38188	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37629	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 23:36	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	37598	10/23/22 21:23	CH	EET MID

Client Sample ID: PH03

Date Collected: 10/19/22 12:15
Date Received: 10/20/22 09:58

Lab Sample ID: 890-3242-2

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			5.02 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 02:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38188	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37629	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 23:57	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	37598	10/23/22 21:28	CH	EET MID

Client Sample ID: PH03

Date Collected: 10/19/22 12:30
Date Received: 10/20/22 09:58

Lab Sample ID: 890-3242-3

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	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 02:56	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38188	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37629	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/22/22 00:18	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	37598	10/23/22 21:33	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

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: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

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: Elvis Injection Line

Job ID: 890-3242-1
SDG: 03D2057011

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3242-1	PH03	Solid	10/19/22 12:00	10/20/22 09:58	1'
890-3242-2	PH03	Solid	10/19/22 12:15	10/20/22 09:58	8'
890-3242-3	PH03	Solid	10/19/22 12:30	10/20/22 09:58	15'

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

www.xenco.com Page 1 of 1

Work Order No: _____

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:		Email:	kjennings@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:	Elvis Injection Line	Turn Around	☑ Routine ☐ Rush
Project Number:	03D2057011	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Conner Shore		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TDM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.8
Total Containers:		Corrected Temperature:	3.6

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 Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH03	S	10.19.22	1200	1'	G	1		X	X	X
PH03	S	10.19.22	1215	8'	G	1		X	X	X
PH03	S	10.19.22	1230	15'	G	1		X	X	X

890-3242 Chain of Custody

10 19 22

Sample Comments

Incident Number

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		10/20/22 938	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3242-1
SDG Number: 03D2057011

Login Number: 3242
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: 890-3242-1
SDG Number: 03D2057011

Login Number: 3242
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/21/22 10:46 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	

ENSOLUM

APPENDIX E

Final C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # *(assigned by OCD)*
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# *(if applicable)*

Unit Letter	Section	Township	Range	County

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	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		

Form C-141 State of New Mexico
Page 2 Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

☐ 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 _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 05/16/2022

L48 Spill Volume Estimate Form

NAPP2213642290

Name & Number:	elvis injection#1
Asset Area:	Maljamar
Release Discovery Date & Time:	5/4/2022 9:03
Release Type:	Produced Water
Provide any known details about the event:	injection line rupture

Spill Calculation - Subsurface Spill - Rectangle

Was the release on pad or off-pad?	See reference table below
Has it rained at least a half inch in the last 24 hours?	See reference table below

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Depth (in.)	Soil Spilled-Fluid Saturation	Estimated volume of each area (bbl.)	Total Estimated Volume of Spill (bbl.)
Rectangle A	30.0	53.0	1.00	15.12%	23.585	3.566
Rectangle B	50.0	52.0	4.00	15.12%	154.267	23.325
Rectangle C	18.0	20.0	4.00	15.12%	21.360	3.230
Rectangle D					0.000	0.000
Rectangle E					0.000	0.000
Rectangle F					0.000	0.000
Rectangle G					0.000	0.000
Rectangle H					0.000	0.000
Rectangle I					0.000	0.000
					0.000	0.000
					Total Volume Release:	30.121

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

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 107046
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	5/16/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2212531906
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	50-100 (feet bgs)
Did this release impact groundwater or surface water?	☐ 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

HSE Specialist

Incident ID	NAPP2212531906
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bryce Wagoner Title: Permian HSE Specialist II

Signature: Date: 12/28/2022

email: Bryce.Wagoner@mavresources.com Telephone: 928-241-1862

OCD Only

Received by: Jocelyn Harimon Date: 12/29/2022

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2213642290
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.

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Printed Name: _Bryce Wagoner_____ Title: _Permian HSE Specialist II_____

Signature: _____ Date: ___12/28/2022_____

email: _Bryce.Wagoner@mavresources.com_____ Telephone: __928-241-1862_____

OCD Only

Received by: Jocelyn Harimon Date: 12/28/2022

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

Signature: Jennifer Nobui Date: 01/24/2023

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1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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811 S. First St., Artesia, NM 88210
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1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 170836

CONDITIONS

Operator: Maverick Permian LLC 1111 Bagby Street Suite 1600 Houston, TX 77002	OGRID: 331199
	Action Number: 170836
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Remediation Plan Approved.	1/24/2023