July 19, 2022

District 1
New Mexico Oil Conservation Division
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Request
Columbus Federal 021H & 022H CTB
Incident Number NAPP2203830124
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of COG Operating, LLC (COG), has prepared this Closure Request to document site assessment, excavation, and soil sampling activities performed at the Columbus Federal 021H & 022H Centeral Tank Battery (CTB) (collectively referreed to as the Site). The purpose of the site assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a crude oil flare fire at the Site. Based on the excavation activities and laboratory analytical results from the soil sampling events, COG is submitting this Closure Request, describing remediation that has occurred and requesting closure for Incident Number NAPP2203830124.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit A, Section 34, Township 25 South, Range 33 East, in Lea County, New Mexico (32.092222° N, 103.55556° W) and is associated with oil and gas exploration and production operations on Brown Sandra Rudy private land.

On January 22, 2022, approximately 1.6 barrels (bbls) of crude oil released out of a flare located at the Site. The released crude oil ignited and extinguished itself after reaching the ground. COG reported the release immediately via email to the New Mexico Oil Conservation Division (NMOCD) on January 23, 2022 and submitted a Release Notification Form C-141 (Form C-141) on February 7, 2022. The release was assigned Incident Number NAPP2203830124.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C-02313, located

approximately 0.5 miles northeast of the Site. The groundwater well has a reported depth to groundwater of 110 feet bgs and a total depth of 150 feet bgs. Ground surface elevation at the groundwater well location is 3,323 feet above mean sea level (amsl), which is approximately 5 feet lower in elevation than the Site. There are no regional or Site-specific hydrological conditions, such as shallow surface water, karst features, wetlands, or vegetation that suggest the Site is conducive to shallow groundwater. All wells used for depth to groundwater determination are presented on Figure 1. The referenced well records are included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an intermittent riverine, located approximately 2.8 miles southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

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

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

SITE ASSESSMENT ACTIVITIES AND ANALYTICAL RESULTS

On June 13, 2022, site assessment activities were conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. Eight preliminary assessment soil samples (SS01 through SS08) were collected within the release extent at a depth of 0.5 feet bgs, to assess the lateral extent of the release. The preliminary soil samples were field screened for volatile aromatic hydrocarbons utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of 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 preliminary soil sample SS01, collected within the release extent, indicated TPH and TPH-GRO/TPH-DRO concentrations exceeded the Closure Criteria. Laboratory analytical results for preliminary soil samples SS02 through SS08, collected within the release extent, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with

the Closure Criteria. Based on visible staining in the release area near the flare stack, elevated field screening results, and laboratory analytical results for preliminary soil sample SS01, delineation and excavation activities appeared to be warranted.

DELINEATION AND EXCAVATION SOIL SAMPLING ACTIVITIES

On July 7, 2022, Ensolum personnel were at the Site to oversee delineation and excavation activities. Four potholes (PH01 through PH04) were advanced via backhoe within the release extent to assess the vertical extent of impacted soil. The potholes were advanced to a depth of 2 feet bgs in the vicinity of preliminary soil sample locations SS04, SS05, SS06, and SS08, respectively. Delineation soil samples (PH01/PH01A through PH04/PH04A) were collected from each pothole at depths of 1-foot and 2 feet bgs. Additionally, four lateral delineation soil samples (SS09 through SS12) were collected outside the release extent at a depth of 0.5 feet bgs to confirm the lateral extent of the release. Soil from all sample locations was field screened for volatile aromatic hydrocarbons and chloride. Field screening results and observations for the potholes were logged on lithologic soil sampling logs, which are included in Appendix B. The delineation soil sample locations are depicted on Figure 3.

Upon completion of delineation activities, impacted soil was excavated from the release area as indicated by visible staining and laboratory analytical results for the preliminary soil samples, specifically in the vicinity of surface soil sample SS01. Excavation activities were performed using track-mounted backhoe and transport vehicle. The excavation occurred on pad. To direct excavation activities, soil was screened for volatile aromatic hydrocarbons and chloride. The excavation was completed to a depth of 0.75 feet bgs. Photographic documentation of the excavation activities is included in Appendix C.

Following removal of the impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Due to the shallow depth of the excavation, the sidewalls were incorporated into the floor samples. Composite soil samples FS01 through FS08 were collected from the floor of the excavation at a depth of 0.75 feet bgs. The soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 4.

The excavation area measured approximately 1,626 square feet in areal extent. A total of 45 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Hobbs, New Mexico.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH04 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and the reclamation requirement. Additionally, laboratory analytical results for lateral delineation soil samples SS09 through SS12, collected around the release extent, were compliant with the most stringent Table 1 Closure Criteria and successfully defined the lateral extent of the release.

Laboratory analytical results for excavation floor samples FS01 through FS08 indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and compliant with the reclamation requirement. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Appendix D.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the January 2022, crude oil flare fire. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, delineation potholes, and lateral delineation soil samples, indicated benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and compliant with the reclamation requirement. Based on the soil sample analytical results, no further remediation was required. COG will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions.

Excavation of impacted soil has mitigated impacts at this Site. Depth to groundwater was estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. COG believes these remedial actions are protective of human health, the environment, and groundwater. As such, COG respectfully requests closure for Incident Number NAPP2203830124. A Final C-141 is included as Appendix F.

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

Sincerely,
Ensolum, LLC

Kalei Jennings
Senior Scientist

Daniel R. Moir, P.G.
Senior Managing Geologist

cc: Charles Beauvais, COG Operating, LLC

Appendices:

Figure 1	Site Receptor Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Lithologic Soil Sampling Logs
Appendix C	Photographic Log
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Sample Notification
Appendix F	Final C-141

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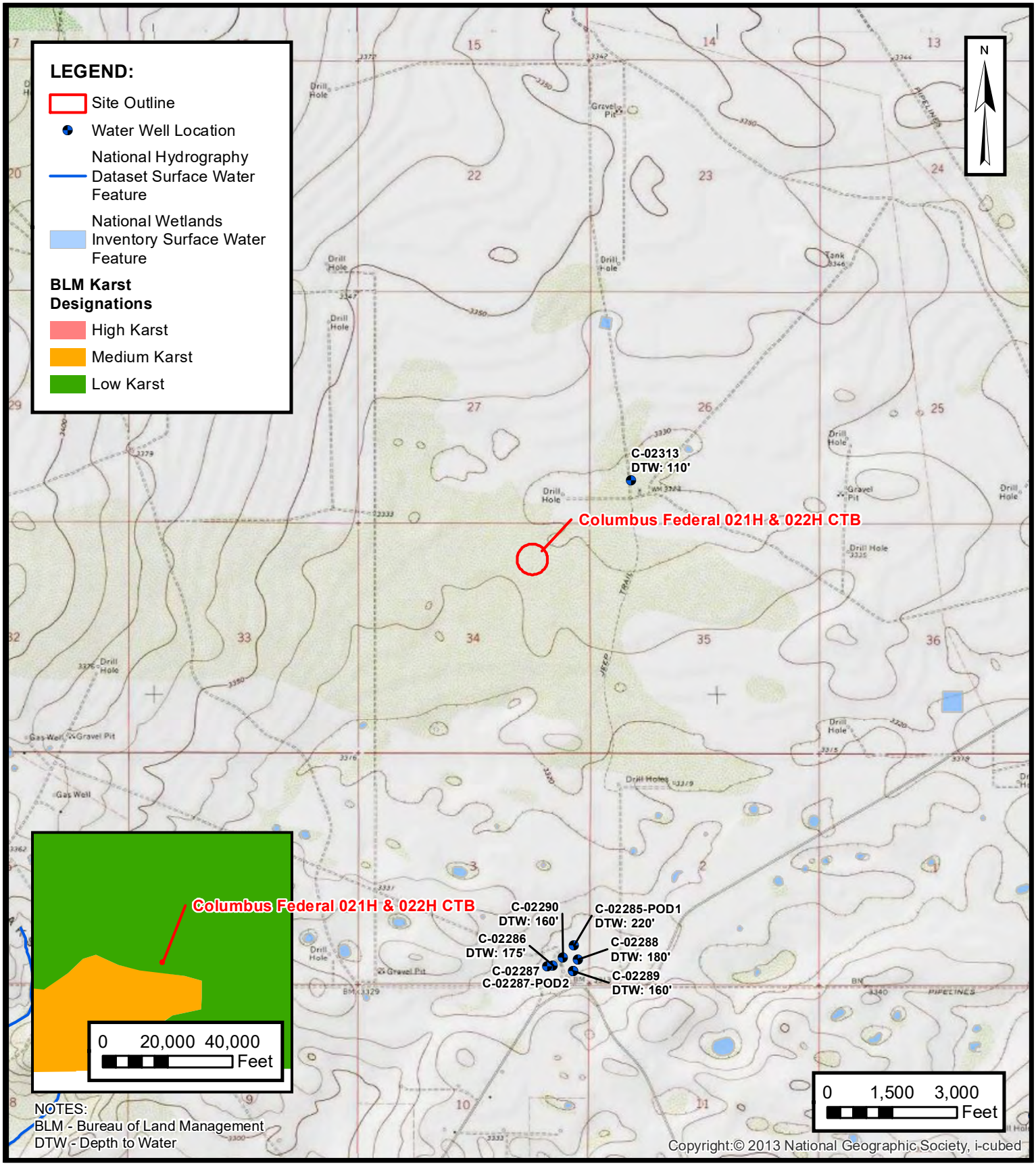
FIGURES



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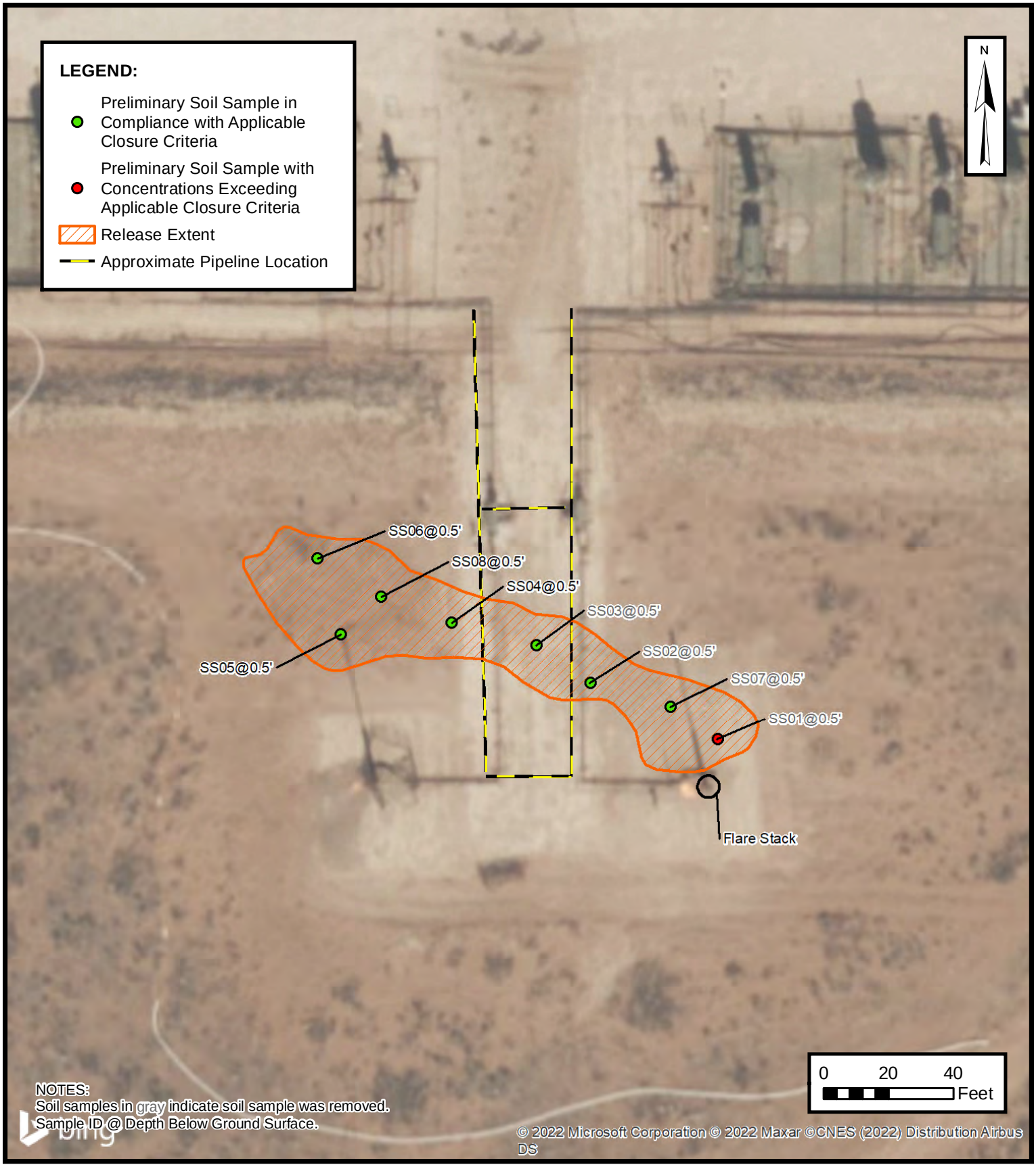
SITE RECEPTOR MAP

COG OPERATING, LLC
COLUMBUS FEDERAL 021H & 022H CTB
NAPP2203830124
Unit A, Sec 34 T25S R33E
Lea County, New Mexico

FIGURE
1



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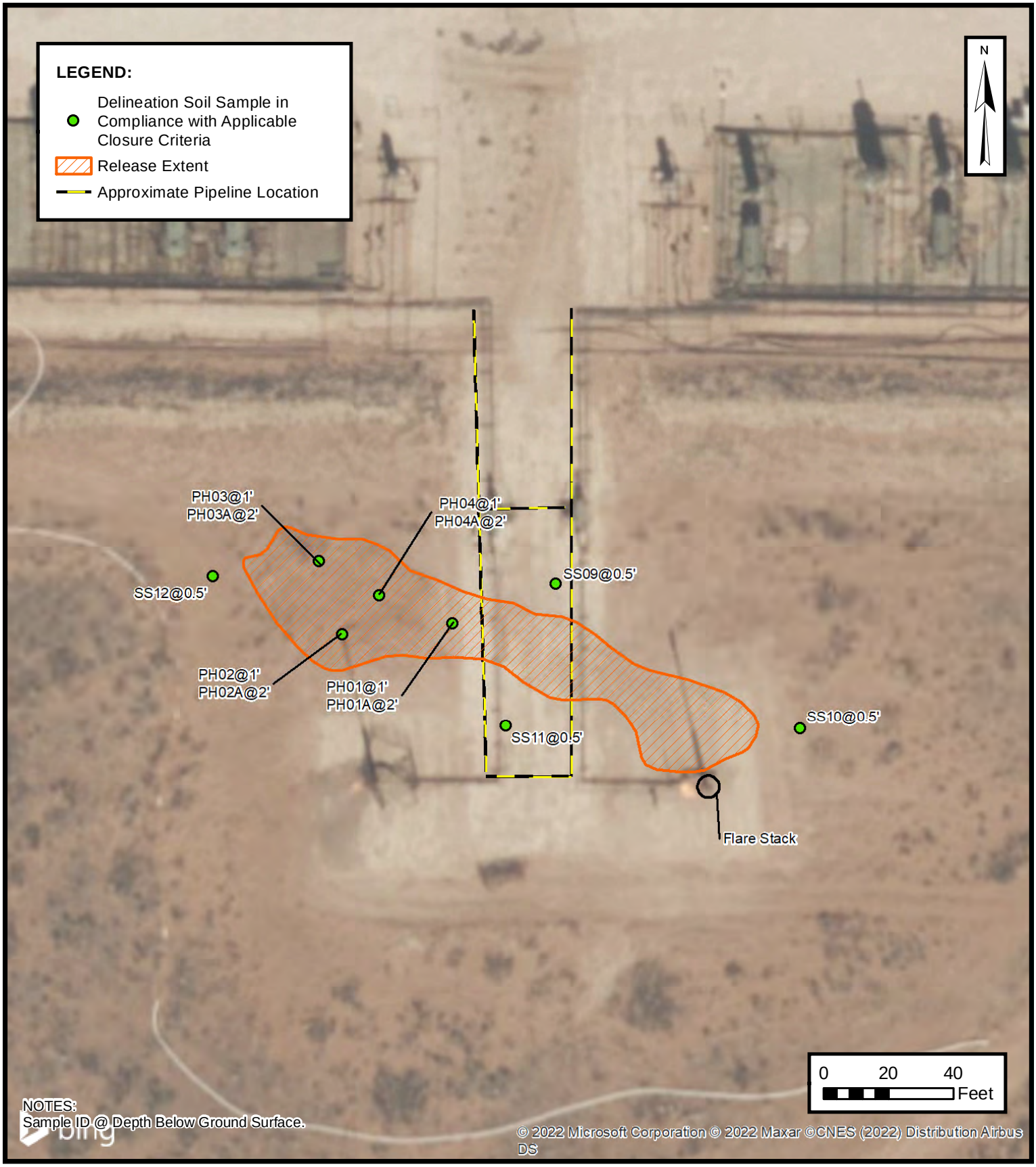
PRELIMINARY SOIL SAMPLE LOCATIONS

COG OPERATING, LLC
COLUMBUS FEDERAL 021H & 022H CTB
NAPP2203830124
Unit A, Sec 34 T25S R33E
Lea County, New Mexico

FIGURE
2



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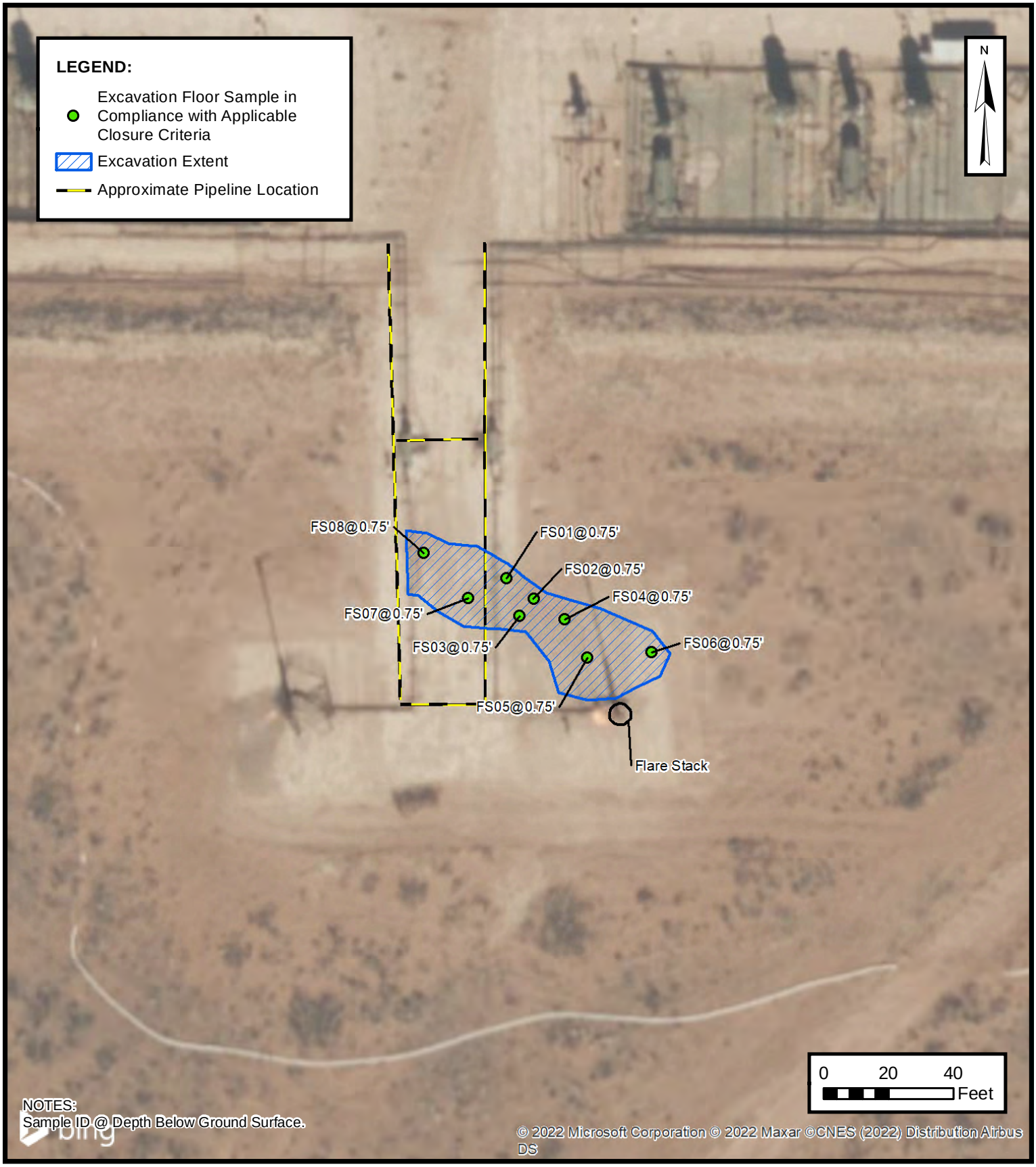
DELINEATION SOIL SAMPLE LOCATIONS

COG OPERATING, LLC
COLUMBUS FEDERAL 021H & 022H CTB
NAPP2203830124
Unit A, Sec 34 T25S R33E
Lea County, New Mexico

FIGURE
3



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EXCAVATION SOIL SAMPLE LOCATIONS

COG OPERATING, LLC
COLUMBUS FEDERAL 021H & 022H CTB
NAPP2203830124
Unit A, Sec 34 T25S R33E
Lea County, New Mexico

FIGURE
4

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Columbus Federal 021H & 022H CTB
COG Operating, LLC
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Preliminary Assessment Soil Samples										
SS01	06/13/2022	0.5	<0.00201	<0.00402	<50.0	2,140	<50.0	**2,140**	**2,950**	44.0
SS02	06/13/2022	0.5	<0.00202	<0.00404	<49.9	229	<49.9	229	377	14.0
SS03	06/13/2022	0.5	<0.00200	<0.00399	<49.9	67.4	<49.9	67.4	156	30.9
SS04	06/13/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	11.7
SS05	06/13/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	8.32
SS06	06/13/2022	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	8.50
SS07	06/13/2022	0.5	<0.00199	<0.00398	<49.9	592	<49.9	592	960	141
SS08	06/13/2022	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	7.87
SS09	07/08/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	<5.02
SS10	07/08/2022	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	8.81
SS11	07/08/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	25.0
SS12	07/08/2022	0.5	<0.00199	<0.00398	<50.0	19.4	<50.0	19.4	19.4	<4.98
Delineation Soil Samples										
PH01	07/08/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	<4.99
PH01A	07/08/2022	2	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	<4.96
PH02	07/08/2022	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	16.1
PH02A	07/08/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	11.9
PH03	07/08/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	<5.02
PH03A	07/08/2022	2	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	<4.97
PH04	07/08/2022	1	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	<5.03
PH04A	07/08/2022	2	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	8.16

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Columbus Federal 021H & 022H CTB
COG Operating, LLC
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**20,000**
Excavation Floor Soil Samples										
FS01	07/07/2022	0.75	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	16.4
FS02	07/07/2022	0.75	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	25.2
FS03	07/07/2022	0.75	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	30.1
FS04	07/07/2022	0.75	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	43.9
FS05	07/07/2022	0.75	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	52.5
FS06	07/07/2022	0.75	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	67.1
FS07	07/08/2022	0.75	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	35.1
FS08	07/08/2022	0.75	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	10.6

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon
* indicates sample was collected in area to be reclaimed after remediation is complete; reclamation standard for chloride in the top 4 feet is 600 mg/kg
Grey text represents samples that have been excavated

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APPENDIX A

Referenced Well Records

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: C 02313 **Subbasin:** CUB **Cross Reference:** -

Primary Purpose: STK 72-12-1 LIVESTOCK WATERING

Primary Status: DCL DECLARATION

Total Acres: 0 **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Owner: NGL WATER SOLUTIONS PERMIAN

Contact: R CHARLES WILKIN

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	633160	COWNF	2018-09-17	CHG	PRC	C 02313	T	0	0	
	207100	COWNF	2001-01-03	CHG	PRC	C 02313	T	0	0	
get images	144654	DCL	1998-02-09	DCL	PRC	C 02313 AMENDMENT	T	0	3	
	198282	DCL	1993-04-20	DCL	PRC	C 02313	T	0	3	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 02313			2	3	3	26	25S	33E	636971	3552098*	

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

Priority Summary

Priority	Status	Acres	Diversion	Pod Number
12/31/1925	DCL	0	3	C 02313

Place of Use

Q 256	Q 64	Q16	Q4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
							0	3		STK		DCL	NO PLACE OF USE GIVEN
							0	3		STK	06/30/1925	DCL	NO PLACE OF USE GIVEN

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
	C 02313	2	3	3	26	25S	33E	636971	3552098*

Driller License: **Driller Company:**

Driller Name: UNKNOWN

Drill Start Date:	01/01/1925	**Drill Finish Date:**	06/30/1925	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	60 GPM
Casing Size:	6.88	**Depth Well:**	150 feet	**Depth Water:**	110 feet

***UTM location was derived from PLSS - see Help**

USGS 320407103331001 26S.33E.03.444110

Lea County, New Mexico
Latitude 32°04'07", Longitude 103°33'10" NAD27
Land-surface elevation 3,311 feet above NAVD88
The depth of the well is 180 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	Water-level date-time accuracy	Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Status	Method of measurement	Measuring agency	Source of measurement	Water-level approval status
1954-07-23		D	62610		3206.62	NGVD29	1	Z			A
1954-07-23		D	62611		3208.20	NAVD88	1	Z			A
1954-07-23		D	72019	102.80			1	Z			A
2013-02-14	16:25 UTC	m	62610			NGVD29	6	S	USGS	S	A
2013-02-14	16:25 UTC	m	62611			NAVD88	6	S	USGS	S	A
2013-02-14	16:25 UTC	m	72019				6	S	USGS	S	A

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APPENDIX B

Lithologic Soil Sampling Logs

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	Sample Name: **PH01**	Date: **07/08/2022**
	Site Name: **Columbus Federal 021H & 022H CTB**	
	Incident Number: **NAPP2203830124**	
	Job Number: 03D2024001	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: **Backhoe**
Coordinates:	Hole Diameter: NA	Total Depth: **2'**

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	<168	0.2	N	PH01	1	1	CCHE	CALICHE, Reddish brown, abundant sand and silt, poorly sorted, moderate grading, no stain, no odor.
D	<168	0.0	N	PH01A	2	2	CCHE	SAA.

TD @ 2 feet bgs

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	Sample Name: **PH02**	Date: **07/08/2022**
	Site Name: **Columbus Federal 021H & 022H CTB**	
	Incident Number: **NAPP2203830124**	
	Job Number: 03D2024001	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: **Backhoe**
Coordinates:	Hole Diameter: NA	Total Depth: **2'**

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	<168	0.5	N	PH02	1	1	CCHE	CALICHE, Reddish brown, abundant sand and silt, poorly sorted, moderate grading, no stain, no odor.
D	<168	0.3	N	PH02A	2	2	CCHE	SAA.

TD @ 2 feet bgs

ENSOLUM

	Sample Name: **PH03**	Date: **07/08/2022**
	Site Name: **Columbus Federal 021H & 022H CTB**	
	Incident Number: **NAPP2203830124**	
	Job Number: 03D2024001	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: **Backhoe**
Coordinates:	Hole Diameter: NA	Total Depth: **2'**

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	<168	0.2	N	PH03	1	1	CCHE	CALICHE, Reddish brown, abundant sand and silt, poorly sorted, moderate grading, no stain, no odor.
D	<168	0.3	N	PH03A	2	2	CCHE	SAA.

TD @ 2 feet bgs

ENSOLUM

	Sample Name: **PH04**	Date: **07/08/2022**
	Site Name: **Columbus Federal 021H & 022H CTB**	
	Incident Number: **NAPP2203830124**	
	Job Number: 03D2024001	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: **Backhoe**
Coordinates:	Hole Diameter: NA	Total Depth: **2'**

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	<168	0.2	N	PH04	1	1	CCHE	CALICHE, Reddish brown, abundant sand and silt, poorly sorted, moderate grading, no stain, no odor.
D	<168	0.0	N	PH04A	2	2	CCHE	SAA.

TD @ 2 feet bgs

ENSOLUM

APPENDIX C

Photographic Log

ENSOLUM

Photographic Log
COG Operating, LLC
Columbus Federal 021H & 022H CTB
Incident Number NAPP2203830124

Photograph 1
Date: January 22, 2022
Description: Photo of release area.

Photograph 2
Date: July 8, 2022
Description: Photo of excavation activities.

Photograph 3
Date: July 8, 2022
Description: Photo of excavation activities.

Photograph 4
Date: July 8, 2022
Description: Photo of excavation activities.

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2409-1
Laboratory Sample Delivery Group: 03D2024001
Client Project/Site: Columbus Fed 021 & 022H CTB
Revision: 1

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
6/22/2022 2:38:30 PM

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

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Laboratory Job ID: 890-2409-1
SDG: 03D2024001

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Definitions/Glossary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Job ID: 890-2409-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2409-1

REVISION

The report being provided is a revision of the original report sent on 6/20/2022. The report (revision 1) is being revised due to Per client email, correct site name.

Report revision history

Receipt
The samples were received on 6/13/2022 3:33 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 30.0°C

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

GC Semi VOA
Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-27556 and analytical batch 880-27563 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10.

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

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

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS01

Date Collected: 06/13/22 11:40
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-1
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		06/16/22 14:55	06/17/22 15:44	1
Toluene	<0.00201	U	0.00201		mg/Kg		06/16/22 14:55	06/17/22 15:44	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		06/16/22 14:55	06/17/22 15:44	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		06/16/22 14:55	06/17/22 15:44	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		06/16/22 14:55	06/17/22 15:44	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		06/16/22 14:55	06/17/22 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*06/16/22 14:55*	*06/17/22 15:44*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*06/16/22 14:55*	*06/17/22 15:44*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			06/17/22 16:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**2950**		50.0		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0		mg/Kg		06/15/22 08:52	06/15/22 17:40	1
Diesel Range Organics (Over C10-C28)	**2140**		50.0		mg/Kg		06/15/22 08:52	06/15/22 17:40	1
Oil Range Organics (Over C28-C36)	**808**		50.0		mg/Kg		06/15/22 08:52	06/15/22 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*06/15/22 08:52*	*06/15/22 17:40*	*1*
o-Terphenyl	*125*		*70 - 130*	*06/15/22 08:52*	*06/15/22 17:40*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**44.0**		5.03		mg/Kg			06/17/22 19:00	1

Client Sample ID: SS02

Date Collected: 06/13/22 11:45
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-2
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		06/16/22 14:55	06/17/22 16:04	1
Toluene	<0.00202	U	0.00202		mg/Kg		06/16/22 14:55	06/17/22 16:04	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		06/16/22 14:55	06/17/22 16:04	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		06/16/22 14:55	06/17/22 16:04	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		06/16/22 14:55	06/17/22 16:04	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		06/16/22 14:55	06/17/22 16:04	1

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS02

Date Collected: 06/13/22 11:45
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-2

Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130	06/16/22 14:55	06/17/22 16:04	1
1,4-Difluorobenzene (Surr)	99		70 - 130	06/16/22 14:55	06/17/22 16:04	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			06/17/22 16:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**377**		49.9		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		06/15/22 08:52	06/15/22 18:02	1
Diesel Range Organics (Over C10-C28)	**229**		49.9		mg/Kg		06/15/22 08:52	06/15/22 18:02	1
OII Range Organics (Over C28-C36)	**148**		49.9		mg/Kg		06/15/22 08:52	06/15/22 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130	06/15/22 08:52	06/15/22 18:02	1
o-Terphenyl	129		70 - 130	06/15/22 08:52	06/15/22 18:02	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14.0**		5.03		mg/Kg			06/17/22 18:14	1

Client Sample ID: SS03

Date Collected: 06/13/22 11:50
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-3

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 16:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 16:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 16:25	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		06/16/22 14:55	06/17/22 16:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 16:25	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		06/16/22 14:55	06/17/22 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130	06/16/22 14:55	06/17/22 16:25	1
1,4-Difluorobenzene (Surr)	96		70 - 130	06/16/22 14:55	06/17/22 16:25	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			06/17/22 16:19	1

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS03

Date Collected: 06/13/22 11:50
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**156**		49.9		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		06/15/22 08:52	06/15/22 18:23	1
Diesel Range Organics (Over C10-C28)	**67.4**		49.9		mg/Kg		06/15/22 08:52	06/15/22 18:23	1
Oil Range Organics (Over C28-C36)	**88.1**		49.9		mg/Kg		06/15/22 08:52	06/15/22 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*06/15/22 08:52*	*06/15/22 18:23*	*1*
o-Terphenyl	*118*		*70 - 130*	*06/15/22 08:52*	*06/15/22 18:23*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**30.9**		5.05		mg/Kg			06/17/22 18:23	1

Client Sample ID: SS04

Date Collected: 06/13/22 11:55
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-4
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 16:45	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 16:45	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 16:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/16/22 14:55	06/17/22 16:45	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 16:45	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/16/22 14:55	06/17/22 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*06/16/22 14:55*	*06/17/22 16:45*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*06/16/22 14:55*	*06/17/22 16:45*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			06/17/22 16:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0		mg/Kg		06/15/22 08:52	06/15/22 18:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 18:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 18:46	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS04

Date Collected: 06/13/22 11:55
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-4

Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*06/15/22 08:52*	*06/15/22 18:46*	*1*
o-Terphenyl	*121*		*70 - 130*	*06/15/22 08:52*	*06/15/22 18:46*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11.7**		4.97		mg/Kg			06/17/22 18:32	1

Client Sample ID: SS05

Date Collected: 06/13/22 12:00
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-5

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:06	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:06	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/16/22 14:55	06/17/22 17:06	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:06	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/16/22 14:55	06/17/22 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*06/16/22 14:55*	*06/17/22 17:06*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*06/16/22 14:55*	*06/17/22 17:06*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			06/17/22 16:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		06/15/22 08:52	06/15/22 19:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		06/15/22 08:52	06/15/22 19:07	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		06/15/22 08:52	06/15/22 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*06/15/22 08:52*	*06/15/22 19:07*	*1*
o-Terphenyl	*108*		*70 - 130*	*06/15/22 08:52*	*06/15/22 19:07*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.32**		4.96		mg/Kg			06/17/22 18:41	1

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS06

Date Collected: 06/13/22 12:05
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-6
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 17:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 17:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 17:26	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		06/16/22 14:55	06/17/22 17:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 17:26	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		06/16/22 14:55	06/17/22 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*06/16/22 14:55*	*06/17/22 17:26*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*06/16/22 14:55*	*06/17/22 17:26*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			06/17/22 16:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0		mg/Kg		06/15/22 08:52	06/15/22 19:29	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 19:29	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*06/15/22 08:52*	*06/15/22 19:29*	*1*
o-Terphenyl	*109*		*70 - 130*	*06/15/22 08:52*	*06/15/22 19:29*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.50**		4.99		mg/Kg			06/17/22 18:51	1

Client Sample ID: SS07

Date Collected: 06/13/22 12:45
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-7
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:47	1
Toluene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:47	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:47	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		06/16/22 14:55	06/17/22 17:47	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		06/16/22 14:55	06/17/22 17:47	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		06/16/22 14:55	06/17/22 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*06/16/22 14:55*	*06/17/22 17:47*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS07

Date Collected: 06/13/22 12:45
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-7

Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*06/16/22 14:55*	*06/17/22 17:47*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			06/17/22 16:19	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**960**		49.9		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		06/15/22 08:52	06/15/22 19:51	1
Diesel Range Organics (Over C10-C28)	**592**		49.9		mg/Kg		06/15/22 08:52	06/15/22 19:51	1
OII Range Organics (Over C28-C36)	**368**		49.9		mg/Kg		06/15/22 08:52	06/15/22 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*99*		*70 - 130*	*06/15/22 08:52*	*06/15/22 19:51*	*1*
o-Terphenyl	*112*		*70 - 130*	*06/15/22 08:52*	*06/15/22 19:51*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**141**		25.0		mg/Kg			06/17/22 19:09	5

Client Sample ID: SS08

Date Collected: 06/13/22 12:50
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-8

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 18:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 18:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 18:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		06/16/22 14:55	06/17/22 18:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 18:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		06/16/22 14:55	06/17/22 18:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*06/16/22 14:55*	*06/17/22 18:07*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*06/16/22 14:55*	*06/17/22 18:07*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			06/17/22 16:19	1

Client Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS08

Date Collected: 06/13/22 12:50
Date Received: 06/13/22 15:33
Sample Depth: 0.5

Lab Sample ID: 890-2409-8

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			06/16/22 09:49	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0		mg/Kg		06/15/22 08:52	06/15/22 20:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 20:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*06/15/22 08:52*	*06/15/22 20:12*	*1*
o-Terphenyl	*112*		*70 - 130*	*06/15/22 08:52*	*06/15/22 20:12*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.87**		5.00		mg/Kg			06/17/22 19:18	1

Surrogate Summary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-2404-A-29-E MS	Matrix Spike	107	97
890-2404-A-29-F MSD	Matrix Spike Duplicate	110	101
890-2409-1	SS01	113	103
890-2409-2	SS02	113	99
890-2409-3	SS03	114	96
890-2409-4	SS04	113	96
890-2409-5	SS05	110	97
890-2409-6	SS06	107	85
890-2409-7	SS07	103	88
890-2409-8	SS08	109	94
LCS 880-27712/1-A	Lab Control Sample	107	98
LCSD 880-27712/2-A	Lab Control Sample Dup	107	99
MB 880-27712/5-A	Method Blank	97	90

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-15888-A-1-B MS	Matrix Spike	88	91
880-15888-A-1-C MSD	Matrix Spike Duplicate	89	92
890-2409-1	SS01	105	125
890-2409-2	SS02	118	129
890-2409-3	SS03	104	118
890-2409-4	SS04	105	121
890-2409-5	SS05	92	108
890-2409-6	SS06	97	109
890-2409-7	SS07	99	112
890-2409-8	SS08	93	112
LCS 880-27556/2-A	Lab Control Sample	103	113
LCSD 880-27556/3-A	Lab Control Sample Dup	93	106
MB 880-27556/1-A	Method Blank	99	114

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-27712/5-A
Matrix: Solid
Analysis Batch: 27743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 27712

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 10:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 10:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 10:55	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		06/16/22 14:55	06/17/22 10:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		06/16/22 14:55	06/17/22 10:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		06/16/22 14:55	06/17/22 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*06/16/22 14:55*	*06/17/22 10:55*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*06/16/22 14:55*	*06/17/22 10:55*	*1*

Lab Sample ID: LCS 880-27712/1-A
Matrix: Solid
Analysis Batch: 27743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27712

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1085		mg/Kg		109	70 - 130		
Toluene			0.100	0.1074		mg/Kg		107	70 - 130		
Ethylbenzene			0.100	0.1095		mg/Kg		109	70 - 130		
m-Xylene & p-Xylene			0.200	0.2257		mg/Kg		113	70 - 130		
o-Xylene			0.100	0.1117		mg/Kg		112	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 880-27712/2-A
Matrix: Solid
Analysis Batch: 27743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 27712

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1030		mg/Kg		103	70 - 130	5	35
Toluene			0.100	0.1008		mg/Kg		101	70 - 130	6	35
Ethylbenzene			0.100	0.1033		mg/Kg		103	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.2124		mg/Kg		106	70 - 130	6	35
o-Xylene			0.100	0.1051		mg/Kg		105	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-2404-A-29-E MS
Matrix: Solid
Analysis Batch: 27743

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 27712

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U	0.0996	0.09284		mg/Kg		93	70 - 130		
Toluene	<0.00200	U	0.0996	0.09128		mg/Kg		92	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

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

Lab Sample ID: 890-2404-A-29-E MS
Matrix: Solid
Analysis Batch: 27743

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 27712

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0996	0.09243		mg/Kg		93	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1923		mg/Kg		97	70 - 130
o-Xylene	<0.00200	U	0.0996	0.09482		mg/Kg		95	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 890-2404-A-29-F MSD
Matrix: Solid
Analysis Batch: 27743

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 27712

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0994	0.09569		mg/Kg		96	70 - 130	3	35
Toluene	<0.00200	U	0.0994	0.09258		mg/Kg		93	70 - 130	1	35
Ethylbenzene	<0.00200	U	0.0994	0.09487		mg/Kg		95	70 - 130	3	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1947		mg/Kg		98	70 - 130	1	35
o-Xylene	<0.00200	U	0.0994	0.09552		mg/Kg		96	70 - 130	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

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

Lab Sample ID: MB 880-27556/1-A
Matrix: Solid
Analysis Batch: 27563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 27556

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		06/15/22 08:52	06/15/22 11:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 11:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		06/15/22 08:52	06/15/22 11:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*06/15/22 08:52*	*06/15/22 11:07*	*1*
o-Terphenyl	*114*		*70 - 130*	*06/15/22 08:52*	*06/15/22 11:07*	*1*

Lab Sample ID: LCS 880-27556/2-A
Matrix: Solid
Analysis Batch: 27563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27556

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10			1000	1104		mg/Kg		110	70 - 130
Diesel Range Organics (Over C10-C28)			1000	1083		mg/Kg		108	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

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

Lab Sample ID: LCS 880-27556/2-A
Matrix: Solid
Analysis Batch: 27563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 27556

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	103		70 - 130
o-Terphenyl	113		70 - 130

Lab Sample ID: LCSD 880-27556/3-A
Matrix: Solid
Analysis Batch: 27563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 27556

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	837.3	*1	mg/Kg		84	70 - 130	27	20
Diesel Range Organics (Over C10-C28)			1000	1017		mg/Kg		102	70 - 130	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	93		70 - 130
o-Terphenyl	106		70 - 130

Lab Sample ID: 880-15888-A-1-B MS
Matrix: Solid
Analysis Batch: 27563

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 27556

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 *1	998	838.6		mg/Kg		82	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	998	808.9		mg/Kg		81	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	91		70 - 130

Lab Sample ID: 880-15888-A-1-C MSD
Matrix: Solid
Analysis Batch: 27563

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 27556

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 *1	999	842.4		mg/Kg		82	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	851.7		mg/Kg		85	70 - 130	5	20

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

QC Sample Results

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-27509/1-A
Matrix: Solid
Analysis Batch: 27702

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			06/17/22 13:12	1

Lab Sample ID: LCS 880-27509/2-A
Matrix: Solid
Analysis Batch: 27702

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	265.3		mg/Kg		106	90 - 110		

Lab Sample ID: LCSD 880-27509/3-A
Matrix: Solid
Analysis Batch: 27702

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	264.4		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 880-15887-A-6-B MS
Matrix: Solid
Analysis Batch: 27702

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	367		248	625.5		mg/Kg		104	90 - 110		

Lab Sample ID: 880-15887-A-6-C MSD
Matrix: Solid
Analysis Batch: 27702

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	367		248	625.5		mg/Kg		104	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

GC VOA

Prep Batch: 27712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Total/NA	Solid	5035	
890-2409-2	SS02	Total/NA	Solid	5035	
890-2409-3	SS03	Total/NA	Solid	5035	
890-2409-4	SS04	Total/NA	Solid	5035	
890-2409-5	SS05	Total/NA	Solid	5035	
890-2409-6	SS06	Total/NA	Solid	5035	
890-2409-7	SS07	Total/NA	Solid	5035	
890-2409-8	SS08	Total/NA	Solid	5035	
MB 880-27712/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-27712/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-27712/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2404-A-29-E MS	Matrix Spike	Total/NA	Solid	5035	
890-2404-A-29-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 27743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Total/NA	Solid	8021B	27712
890-2409-2	SS02	Total/NA	Solid	8021B	27712
890-2409-3	SS03	Total/NA	Solid	8021B	27712
890-2409-4	SS04	Total/NA	Solid	8021B	27712
890-2409-5	SS05	Total/NA	Solid	8021B	27712
890-2409-6	SS06	Total/NA	Solid	8021B	27712
890-2409-7	SS07	Total/NA	Solid	8021B	27712
890-2409-8	SS08	Total/NA	Solid	8021B	27712
MB 880-27712/5-A	Method Blank	Total/NA	Solid	8021B	27712
LCS 880-27712/1-A	Lab Control Sample	Total/NA	Solid	8021B	27712
LCSD 880-27712/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	27712
890-2404-A-29-E MS	Matrix Spike	Total/NA	Solid	8021B	27712
890-2404-A-29-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	27712

Analysis Batch: 27838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Total/NA	Solid	Total BTEX	
890-2409-2	SS02	Total/NA	Solid	Total BTEX	
890-2409-3	SS03	Total/NA	Solid	Total BTEX	
890-2409-4	SS04	Total/NA	Solid	Total BTEX	
890-2409-5	SS05	Total/NA	Solid	Total BTEX	
890-2409-6	SS06	Total/NA	Solid	Total BTEX	
890-2409-7	SS07	Total/NA	Solid	Total BTEX	
890-2409-8	SS08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 27556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Total/NA	Solid	8015NM Prep	
890-2409-2	SS02	Total/NA	Solid	8015NM Prep	
890-2409-3	SS03	Total/NA	Solid	8015NM Prep	
890-2409-4	SS04	Total/NA	Solid	8015NM Prep	
890-2409-5	SS05	Total/NA	Solid	8015NM Prep	
890-2409-6	SS06	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

GC Semi VOA (Continued)

Prep Batch: 27556 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-7	SS07	Total/NA	Solid	8015NM Prep	
890-2409-8	SS08	Total/NA	Solid	8015NM Prep	
MB 880-27556/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-27556/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-27556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-15888-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-15888-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 27563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Total/NA	Solid	8015B NM	27556
890-2409-2	SS02	Total/NA	Solid	8015B NM	27556
890-2409-3	SS03	Total/NA	Solid	8015B NM	27556
890-2409-4	SS04	Total/NA	Solid	8015B NM	27556
890-2409-5	SS05	Total/NA	Solid	8015B NM	27556
890-2409-6	SS06	Total/NA	Solid	8015B NM	27556
890-2409-7	SS07	Total/NA	Solid	8015B NM	27556
890-2409-8	SS08	Total/NA	Solid	8015B NM	27556
MB 880-27556/1-A	Method Blank	Total/NA	Solid	8015B NM	27556
LCS 880-27556/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	27556
LCSD 880-27556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	27556
880-15888-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	27556
880-15888-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	27556

Analysis Batch: 27671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Total/NA	Solid	8015 NM	
890-2409-2	SS02	Total/NA	Solid	8015 NM	
890-2409-3	SS03	Total/NA	Solid	8015 NM	
890-2409-4	SS04	Total/NA	Solid	8015 NM	
890-2409-5	SS05	Total/NA	Solid	8015 NM	
890-2409-6	SS06	Total/NA	Solid	8015 NM	
890-2409-7	SS07	Total/NA	Solid	8015 NM	
890-2409-8	SS08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 27509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Soluble	Solid	DI Leach	
890-2409-2	SS02	Soluble	Solid	DI Leach	
890-2409-3	SS03	Soluble	Solid	DI Leach	
890-2409-4	SS04	Soluble	Solid	DI Leach	
890-2409-5	SS05	Soluble	Solid	DI Leach	
890-2409-6	SS06	Soluble	Solid	DI Leach	
890-2409-7	SS07	Soluble	Solid	DI Leach	
890-2409-8	SS08	Soluble	Solid	DI Leach	
MB 880-27509/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-27509/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-27509/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-15887-A-6-B MS	Matrix Spike	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

HPLC/IC (Continued)

Leach Batch: 27509 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-15887-A-6-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 27702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2409-1	SS01	Soluble	Solid	300.0	27509
890-2409-2	SS02	Soluble	Solid	300.0	27509
890-2409-3	SS03	Soluble	Solid	300.0	27509
890-2409-4	SS04	Soluble	Solid	300.0	27509
890-2409-5	SS05	Soluble	Solid	300.0	27509
890-2409-6	SS06	Soluble	Solid	300.0	27509
890-2409-7	SS07	Soluble	Solid	300.0	27509
890-2409-8	SS08	Soluble	Solid	300.0	27509
MB 880-27509/1-A	Method Blank	Soluble	Solid	300.0	27509
LCS 880-27509/2-A	Lab Control Sample	Soluble	Solid	300.0	27509
LCSD 880-27509/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	27509
880-15887-A-6-B MS	Matrix Spike	Soluble	Solid	300.0	27509
880-15887-A-6-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	27509

Lab Chronicle

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS01
Date Collected: 06/13/22 11:40
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-1
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			4.98 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 15:44	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 17:40	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 19:00	CH	XEN MID

Client Sample ID: SS02
Date Collected: 06/13/22 11:45
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-2
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			4.95 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 16:04	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 18:02	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 18:14	CH	XEN MID

Client Sample ID: SS03
Date Collected: 06/13/22 11:50
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-3
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	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 16:25	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 18:23	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 18:23	CH	XEN MID

Client Sample ID: SS04
Date Collected: 06/13/22 11:55
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 16:45	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS04
Date Collected: 06/13/22 11:55
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 18:46	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 18:32	CH	XEN MID

Client Sample ID: SS05
Date Collected: 06/13/22 12:00
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 17:06	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 19:07	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 18:41	CH	XEN MID

Client Sample ID: SS06
Date Collected: 06/13/22 12:05
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 17:26	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 19:29	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 18:51	CH	XEN MID

Client Sample ID: SS07
Date Collected: 06/13/22 12:45
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 17:47	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 19:51	AJ	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Client Sample ID: SS07

Date Collected: 06/13/22 12:45
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		5			27702	06/17/22 19:09	CH	XEN MID

Client Sample ID: SS08

Date Collected: 06/13/22 12:50
Date Received: 06/13/22 15:33

Lab Sample ID: 890-2409-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	27712	06/16/22 14:55	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	27743	06/17/22 18:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			27838	06/17/22 16:19	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			27671	06/16/22 09:49	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	27556	06/15/22 08:52	DM	XEN MID
Total/NA	Analysis	8015B NM		1			27563	06/15/22 20:12	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	27509	06/15/22 12:53	SC	XEN MID
Soluble	Analysis	300.0		1			27702	06/17/22 19:18	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

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	T104704400-21-22	06-30-22

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: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Columbus Fed 021 & 022H CTB

Job ID: 890-2409-1
SDG: 03D2024001

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2409-1	SS01	Solid	06/13/22 11:40	06/13/22 15:33	0.5
890-2409-2	SS02	Solid	06/13/22 11:45	06/13/22 15:33	0.5
890-2409-3	SS03	Solid	06/13/22 11:50	06/13/22 15:33	0.5
890-2409-4	SS04	Solid	06/13/22 11:55	06/13/22 15:33	0.5
890-2409-5	SS05	Solid	06/13/22 12:00	06/13/22 15:33	0.5
890-2409-6	SS06	Solid	06/13/22 12:05	06/13/22 15:33	0.5
890-2409-7	SS07	Solid	06/13/22 12:45	06/13/22 15:33	0.5
890-2409-8	SS08	Solid	06/13/22 12:50	06/13/22 15:33	0.5

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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)	~~Conner Phillips~~ KP
Company Name:	Ensolum	Company Name:	Ensolum
Address:		Address:	
City, State ZIP:		City, State ZIP:	
Phone:	817-683-2503	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:	Lithium Fed 021 & 022H CTB	Turn Around	
Project Number:	03D2024001	☑ Routine	☐ Rush
Project Location:	32.0422, -103.5553	Due Date:	
Sampler's Name:	Kase Parker	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:	TWM007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.8	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	30.2	
Total Containers:		Corrected Temperature:	~~29.8~~ 30.0 CKC	

890-2409 Chain of Custody

Preservative Codes

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

ANALYSIS REQUEST (Parameters / Pres. Code)

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTEX	TPH	Chlorides	Sample Comments
SS01	S	6/13/22	1140	0.5'			X	X	X	Incident #:
SS02	↓	↓	1145	↓			↓	↓	↓	NAPP2203830185
SS03	↓	↓	1150	↓			↓	↓	↓	
SS04	↓	↓	1155	↓			↓	↓	↓	
SS05	↓	↓	1200	↓			↓	↓	↓	
SS06	↓	↓	1205	↓			↓	↓	↓	
SS07	↓	↓	1245	↓			↓	↓	↓	
SS08	↓	↓	1250	↓			↓	↓	↓	

KP

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 [signature]	Cloe Guy [signature]	6·13·22 1538	2		
3			4		
5			6		

Revised Date 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2409-1
SDG Number: 03D2024001

Login Number: 2409
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2409-1
SDG Number: 03D2024001

Login Number: 2409
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 06/15/22 11:11 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: 890-2526-1
Laboratory Sample Delivery Group: 03D2024001
Client Project/Site: COLUMBUS 021H & 022H CTB

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
7/14/2022 9:28:16 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: COLUMBUS 021H & 022H CTB

Laboratory Job ID: 890-2526-1
SDG: 03D2024001

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Definitions/Glossary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Job ID: 890-2526-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2526-1

Receipt
The samples were received on 7/11/2022 10:26 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-29556 and analytical batch 880-29497 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Client Sample ID: SS09

Lab Sample ID: 890-2526-1
Matrix: Solid
Date Collected: 07/08/22 13:25
Date Received: 07/11/22 10:26
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/13/22 23:05	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/13/22 23:05	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/13/22 23:05	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/13/22 14:00	07/13/22 23:05	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/13/22 23:05	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/13/22 14:00	07/13/22 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*07/13/22 14:00*	*07/13/22 23:05*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*07/13/22 14:00*	*07/13/22 23:05*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 00:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 00:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 00:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*07/12/22 14:20*	*07/13/22 00:20*	*1*
o-Terphenyl	*93*		*70 - 130*	*07/12/22 14:20*	*07/13/22 00:20*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.02	U	5.02		mg/Kg			07/13/22 10:04	1

Client Sample ID: SS10

Lab Sample ID: 890-2526-2
Matrix: Solid
Date Collected: 07/08/22 13:35
Date Received: 07/11/22 10:26
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 23:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 23:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 23:25	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/13/22 23:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 23:25	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/13/22 23:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*07/13/22 14:00*	*07/13/22 23:25*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Client Sample ID: SS10

Lab Sample ID: 890-2526-2
Matrix: Solid
Date Collected: 07/08/22 13:35
Date Received: 07/11/22 10:26
Sample Depth: 0.5

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*07/13/22 14:00*	*07/13/22 23:25*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/12/22 14:20	07/13/22 00:41	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/12/22 14:20	07/13/22 00:41	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/12/22 14:20	07/13/22 00:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*07/12/22 14:20*	*07/13/22 00:41*	*1*
o-Terphenyl	*90*		*70 - 130*	*07/12/22 14:20*	*07/13/22 00:41*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.81**		4.99	mg/Kg			07/13/22 11:31	1

Client Sample ID: SS11

Lab Sample ID: 890-2526-3
Matrix: Solid
Date Collected: 07/08/22 13:40
Date Received: 07/11/22 10:26
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		07/13/22 14:00	07/13/22 23:45	1
Toluene	<0.00199	U	0.00199	mg/Kg		07/13/22 14:00	07/13/22 23:45	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		07/13/22 14:00	07/13/22 23:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		07/13/22 14:00	07/13/22 23:45	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		07/13/22 14:00	07/13/22 23:45	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		07/13/22 14:00	07/13/22 23:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*07/13/22 14:00*	*07/13/22 23:45*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*07/13/22 14:00*	*07/13/22 23:45*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/13/22 09:45	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Client Sample ID: SS11

Lab Sample ID: 890-2526-3
Matrix: Solid
Date Collected: 07/08/22 13:40
Date Received: 07/11/22 10:26
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 01:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 01:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 01:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*07/12/22 14:20*	*07/13/22 01:24*	*1*
o-Terphenyl	*96*		*70 - 130*	*07/12/22 14:20*	*07/13/22 01:24*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**25.0**		4.98		mg/Kg			07/13/22 11:39	1

Client Sample ID: SS12

Lab Sample ID: 890-2526-4
Matrix: Solid
Date Collected: 07/08/22 13:45
Date Received: 07/11/22 10:26
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 00:06	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 00:06	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 00:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 00:06	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 00:06	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 00:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*07/13/22 14:00*	*07/14/22 00:06*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*07/13/22 14:00*	*07/14/22 00:06*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**19.4**		50.0		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 01:46	1
Diesel Range Organics (Over C10-C28)	**19.4**		50.0		mg/Kg		07/12/22 14:20	07/13/22 01:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 01:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*07/12/22 14:20*	*07/13/22 01:46*	*1*
o-Terphenyl	*102*		*70 - 130*	*07/12/22 14:20*	*07/13/22 01:46*	*1*

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Client Sample ID: SS12
Date Collected: 07/08/22 13:45
Date Received: 07/11/22 10:26
Sample Depth: 0.5

Lab Sample ID: 890-2526-4
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.98	U	4.98		mg/Kg			07/13/22 11:47	1

Surrogate Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

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)
890-2526-1	SS09	104	100
890-2526-1 MS	SS09	101	99
890-2526-1 MSD	SS09	103	99
890-2526-2	SS10	99	99
890-2526-3	SS11	106	100
890-2526-4	SS12	103	98
LCS 880-29670/1-A	Lab Control Sample	96	97
LCSD 880-29670/2-A	Lab Control Sample Dup	101	96
MB 880-29558/5-A	Method Blank	96	99
MB 880-29670/5-A	Method Blank	95	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-2526-1	SS09	89	93
890-2526-2	SS10	86	90
890-2526-3	SS11	87	96
890-2526-4	SS12	104	102
890-2527-A-1-C MS	Matrix Spike	81	78
890-2527-A-1-D MSD	Matrix Spike Duplicate	80	80
LCS 880-29556/2-A	Lab Control Sample	99	109
LCSD 880-29556/3-A	Lab Control Sample Dup	95	101
MB 880-29556/1-A	Method Blank	112	117

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-29558/5-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29558

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/12/22 14:57	07/13/22 10:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*07/12/22 14:57*	*07/13/22 10:58*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*07/12/22 14:57*	*07/13/22 10:58*	*1*

Lab Sample ID: MB 880-29670/5-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29670

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/13/22 14:00	07/13/22 22:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*07/13/22 14:00*	*07/13/22 22:36*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*07/13/22 14:00*	*07/13/22 22:36*	*1*

Lab Sample ID: LCS 880-29670/1-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09248		mg/Kg		92	70 - 130		
Toluene			0.100	0.08671		mg/Kg		87	70 - 130		
Ethylbenzene			0.100	0.08569		mg/Kg		86	70 - 130		
m-Xylene & p-Xylene			0.200	0.1808		mg/Kg		90	70 - 130		
o-Xylene			0.100	0.09740		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 880-29670/2-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08878		mg/Kg		89	70 - 130	4	35

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QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

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

Lab Sample ID: LCSD 880-29670/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29611 — **Prep Batch: 29670**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.09243		mg/Kg		92	70 - 130	6	35
Ethylbenzene			0.100	0.09135		mg/Kg		91	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1932		mg/Kg		97	70 - 130	7	35
o-Xylene			0.100	0.1042		mg/Kg		104	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 890-2526-1 MS — **Client Sample ID: SS09**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29611 — **Prep Batch: 29670**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.09321		mg/Kg		93	70 - 130
Toluene	<0.00201	U	0.0998	0.08250		mg/Kg		83	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.08098		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1700		mg/Kg		85	70 - 130
o-Xylene	<0.00201	U	0.0998	0.09364		mg/Kg		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-2526-1 MSD — **Client Sample ID: SS09**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29611 — **Prep Batch: 29670**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.08758		mg/Kg		88	70 - 130	6	35
Toluene	<0.00201	U	0.0994	0.08365		mg/Kg		84	70 - 130	1	35
Ethylbenzene	<0.00201	U	0.0994	0.08315		mg/Kg		84	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1762		mg/Kg		89	70 - 130	4	35
o-Xylene	<0.00201	U	0.0994	0.09699		mg/Kg		98	70 - 130	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

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

Lab Sample ID: MB 880-29556/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

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		07/12/22 14:20	07/12/22 19:42	1

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

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

Lab Sample ID: MB 880-29556/1-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29556

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		07/12/22 14:20	07/12/22 19:42	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*07/12/22 14:20*	*07/12/22 19:42*	*1*
o-Terphenyl	*117*		*70 - 130*	*07/12/22 14:20*	*07/12/22 19:42*	*1*

Lab Sample ID: LCS 880-29556/2-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29556

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1074		mg/Kg		107	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	917.3		mg/Kg		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*109*		*70 - 130*

Lab Sample ID: LCSD 880-29556/3-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29556

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	951.6		mg/Kg		95	70 - 130	12	20
Diesel Range Organics (Over C10-C28)			1000	889.0		mg/Kg		89	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

Lab Sample ID: 890-2527-A-1-C MS
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29556

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	996	887.1		mg/Kg		89	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	996	682.2	F1	mg/Kg		68	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*81*		*70 - 130*
o-Terphenyl	*78*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

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

Lab Sample ID: 890-2527-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

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	881.1		mg/Kg		88	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	708.4		mg/Kg		71	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*80*		*70 - 130*
o-Terphenyl	*80*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-29459/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/13/22 09:28	1

Lab Sample ID: LCS 880-29459/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	241.0		mg/Kg		96	90 - 110		

Lab Sample ID: LCSD 880-29459/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.1		mg/Kg		97	90 - 110	1	20

Lab Sample ID: 890-2526-1 MS — **Client Sample ID: SS09**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	<5.02	U	251	246.7		mg/Kg		97	90 - 110		

Lab Sample ID: 890-2526-1 MSD — **Client Sample ID: SS09**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<5.02	U	251	251.3		mg/Kg		99	90 - 110	2	20

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

GC VOA

Prep Batch: 29558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-29558/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 29611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Total/NA	Solid	8021B	29670
890-2526-2	SS10	Total/NA	Solid	8021B	29670
890-2526-3	SS11	Total/NA	Solid	8021B	29670
890-2526-4	SS12	Total/NA	Solid	8021B	29670
MB 880-29558/5-A	Method Blank	Total/NA	Solid	8021B	29558
MB 880-29670/5-A	Method Blank	Total/NA	Solid	8021B	29670
LCS 880-29670/1-A	Lab Control Sample	Total/NA	Solid	8021B	29670
LCSD 880-29670/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	29670
890-2526-1 MS	SS09	Total/NA	Solid	8021B	29670
890-2526-1 MSD	SS09	Total/NA	Solid	8021B	29670

Prep Batch: 29670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Total/NA	Solid	5035	
890-2526-2	SS10	Total/NA	Solid	5035	
890-2526-3	SS11	Total/NA	Solid	5035	
890-2526-4	SS12	Total/NA	Solid	5035	
MB 880-29670/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-29670/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-29670/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2526-1 MS	SS09	Total/NA	Solid	5035	
890-2526-1 MSD	SS09	Total/NA	Solid	5035	

Analysis Batch: 29740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Total/NA	Solid	Total BTEX	
890-2526-2	SS10	Total/NA	Solid	Total BTEX	
890-2526-3	SS11	Total/NA	Solid	Total BTEX	
890-2526-4	SS12	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 29497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Total/NA	Solid	8015B NM	29556
890-2526-2	SS10	Total/NA	Solid	8015B NM	29556
890-2526-3	SS11	Total/NA	Solid	8015B NM	29556
890-2526-4	SS12	Total/NA	Solid	8015B NM	29556
MB 880-29556/1-A	Method Blank	Total/NA	Solid	8015B NM	29556
LCS 880-29556/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	29556
LCSD 880-29556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	29556
890-2527-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	29556
890-2527-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	29556

Prep Batch: 29556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

GC Semi VOA (Continued)

Prep Batch: 29556 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-2	SS10	Total/NA	Solid	8015NM Prep	
890-2526-3	SS11	Total/NA	Solid	8015NM Prep	
890-2526-4	SS12	Total/NA	Solid	8015NM Prep	
MB 880-29556/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-29556/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-29556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2527-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2527-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 29632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Total/NA	Solid	8015 NM	
890-2526-2	SS10	Total/NA	Solid	8015 NM	
890-2526-3	SS11	Total/NA	Solid	8015 NM	
890-2526-4	SS12	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 29459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Soluble	Solid	DI Leach	
890-2526-2	SS10	Soluble	Solid	DI Leach	
890-2526-3	SS11	Soluble	Solid	DI Leach	
890-2526-4	SS12	Soluble	Solid	DI Leach	
MB 880-29459/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-29459/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-29459/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2526-1 MS	SS09	Soluble	Solid	DI Leach	
890-2526-1 MSD	SS09	Soluble	Solid	DI Leach	

Analysis Batch: 29599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2526-1	SS09	Soluble	Solid	300.0	29459
890-2526-2	SS10	Soluble	Solid	300.0	29459
890-2526-3	SS11	Soluble	Solid	300.0	29459
890-2526-4	SS12	Soluble	Solid	300.0	29459
MB 880-29459/1-A	Method Blank	Soluble	Solid	300.0	29459
LCS 880-29459/2-A	Lab Control Sample	Soluble	Solid	300.0	29459
LCSD 880-29459/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	29459
890-2526-1 MS	SS09	Soluble	Solid	300.0	29459
890-2526-1 MSD	SS09	Soluble	Solid	300.0	29459

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Client Sample ID: SS09

Lab Sample ID: 890-2526-1

Date Collected: 07/08/22 13:25
Matrix: Solid
Date Received: 07/11/22 10:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/13/22 23:05	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29740	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29632	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 00:20	SM	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 10:04	CH	XEN MID

Client Sample ID: SS10

Lab Sample ID: 890-2526-2

Date Collected: 07/08/22 13:35
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/13/22 23:25	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29740	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29632	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 00:41	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 11:31	CH	XEN MID

Client Sample ID: SS11

Lab Sample ID: 890-2526-3

Date Collected: 07/08/22 13:40
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/13/22 23:45	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29740	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29632	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 01:24	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 11:39	CH	XEN MID

Client Sample ID: SS12

Lab Sample ID: 890-2526-4

Date Collected: 07/08/22 13:45
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 00:06	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29740	07/14/22 10:14	SM	XEN MID

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Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Client Sample ID: SS12

Date Collected: 07/08/22 13:45
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2526-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			29632	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 01:46	SM	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 11:47	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

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: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2526-1
SDG: 03D2024001

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2526-1	SS09	Solid	07/08/22 13:25	07/11/22 10:26	0.5
890-2526-2	SS10	Solid	07/08/22 13:35	07/11/22 10:26	0.5
890-2526-3	SS11	Solid	07/08/22 13:40	07/11/22 10:26	0.5
890-2526-4	SS12	Solid	07/08/22 13:45	07/11/22 10:26	0.5

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

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:	Columbus 021H & 022H CTB	**Turn Around**	
Project Number:	03D2024001	☐ Routine ☑ Rush	
Project Location:		Due Date:	3 Day TAT
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:	TAM-807	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4	
Total Containers:		Corrected Temperature:	5.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
SS09	S	07.08.22	1325	0.5'	G	1		x	x	x
SS10	S	07.08.22	1335	0.5'	G	1		x	x	x
SS11	S	07.08.22	1340	0.5'	G	1		x	x	x
SS12	S	07.08.22	1345	0.5'	G	1		x	x	x

Parameters

890-2526 Chain of Custody

Preservative Codes

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

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010:** 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Amanda Stuft	7/11/22 1036			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2526-1
SDG Number: 03D2024001

Login Number: 2526
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2526-1
SDG Number: 03D2024001

Login Number: 2526
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/12/22 11:11 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: 890-2527-1
Laboratory Sample Delivery Group: 03D2024001
Client Project/Site: COLUMBUS 021H & 022H CTB

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
7/14/2022 9:28:16 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: COLUMBUS 021H & 022H CTB

Laboratory Job ID: 890-2527-1
SDG: 03D2024001

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Definitions/Glossary

Client: Ensolum Job ID: 890-2527-1
Project/Site: COLUMBUS 021H & 022H CTB SDG: 03D2024001

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Job ID: 890-2527-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2527-1

Receipt
The samples were received on 7/11/2022 10:26 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-29556 and analytical batch 880-29497 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS01

Lab Sample ID: 890-2527-1
Matrix: Solid
Date Collected: 07/07/22 14:40
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:26	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 00:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:26	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 00:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*07/13/22 14:00*	*07/14/22 00:26*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*07/13/22 14:00*	*07/14/22 00:26*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 20:46	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9		mg/Kg		07/12/22 14:20	07/12/22 20:46	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 20:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*07/12/22 14:20*	*07/12/22 20:46*	*1*
o-Terphenyl	*108*		*70 - 130*	*07/12/22 14:20*	*07/12/22 20:46*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16.4**		5.03		mg/Kg			07/13/22 11:55	1

Client Sample ID: FS02

Lab Sample ID: 890-2527-2
Matrix: Solid
Date Collected: 07/07/22 14:45
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:47	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/13/22 14:00	07/14/22 00:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 00:47	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/13/22 14:00	07/14/22 00:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*07/13/22 14:00*	*07/14/22 00:47*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS02

Lab Sample ID: 890-2527-2
Matrix: Solid
Date Collected: 07/07/22 14:45
Date Received: 07/11/22 10:26
Sample Depth: 0.75

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*07/13/22 14:00*	*07/14/22 00:47*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 21:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 21:50	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 21:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*91*		*70 - 130*	*07/12/22 14:20*	*07/12/22 21:50*	*1*
o-Terphenyl	*100*		*70 - 130*	*07/12/22 14:20*	*07/12/22 21:50*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**25.2**		5.05		mg/Kg			07/13/22 12:18	1

Client Sample ID: FS03

Lab Sample ID: 890-2527-3
Matrix: Solid
Date Collected: 07/07/22 14:50
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 01:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 01:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*07/13/22 14:00*	*07/14/22 01:07*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*07/13/22 14:00*	*07/14/22 01:07*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS03

Date Collected: 07/07/22 14:50
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Lab Sample ID: 890-2527-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 22:11	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 22:11	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 22:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*07/12/22 14:20*	*07/12/22 22:11*	*1*
o-Terphenyl	*96*		*70 - 130*	*07/12/22 14:20*	*07/12/22 22:11*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**30.1**		5.04		mg/Kg			07/13/22 12:26	1

Client Sample ID: FS04

Date Collected: 07/07/22 14:55
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Lab Sample ID: 890-2527-4
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 01:27	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 01:27	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 01:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 01:27	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 01:27	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 01:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*07/13/22 14:00*	*07/14/22 01:27*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*07/13/22 14:00*	*07/14/22 01:27*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC) - RA4

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 22:33	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 22:33	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 22:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*07/12/22 14:20*	*07/12/22 22:33*	*1*
o-Terphenyl	*91*		*70 - 130*	*07/12/22 14:20*	*07/12/22 22:33*	*1*

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS04

Lab Sample ID: 890-2527-4
Matrix: Solid
Date Collected: 07/07/22 14:55
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.9		4.97		mg/Kg			07/13/22 14:16	1

Client Sample ID: FS05

Lab Sample ID: 890-2527-5
Matrix: Solid
Date Collected: 07/07/22 15:00
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:48	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 01:48	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 01:48	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 01:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*07/13/22 14:00*	*07/14/22 01:48*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*07/13/22 14:00*	*07/14/22 01:48*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 22:54	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 22:54	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*07/12/22 14:20*	*07/12/22 22:54*	*1*
o-Terphenyl	*96*		*70 - 130*	*07/12/22 14:20*	*07/12/22 22:54*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.5		5.05		mg/Kg			07/13/22 14:24	1

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS06

Lab Sample ID: 890-2527-6
Matrix: Solid
Date Collected: 07/07/22 15:05
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 02:08	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 02:08	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 02:08	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 02:08	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 02:08	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 02:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*07/13/22 14:00*	*07/14/22 02:08*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*07/13/22 14:00*	*07/14/22 02:08*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 23:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 23:16	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*07/12/22 14:20*	*07/12/22 23:16*	*1*
o-Terphenyl	*95*		*70 - 130*	*07/12/22 14:20*	*07/12/22 23:16*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**67.1**		5.00		mg/Kg			07/13/22 14:32	1

Client Sample ID: FS07

Lab Sample ID: 890-2527-7
Matrix: Solid
Date Collected: 07/08/22 13:15
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 03:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 03:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 03:58	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/13/22 14:00	07/14/22 03:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 03:58	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/13/22 14:00	07/14/22 03:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*07/13/22 14:00*	*07/14/22 03:58*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS07

Lab Sample ID: 890-2527-7
Matrix: Solid
Date Collected: 07/08/22 13:15
Date Received: 07/11/22 10:26
Sample Depth: 0.75

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*07/13/22 14:00*	*07/14/22 03:58*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/12/22 14:20	07/12/22 23:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/12/22 14:20	07/12/22 23:37	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/12/22 14:20	07/12/22 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*88*		*70 - 130*	*07/12/22 14:20*	*07/12/22 23:37*	*1*
o-Terphenyl	*97*		*70 - 130*	*07/12/22 14:20*	*07/12/22 23:37*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35.1**		5.01	mg/Kg			07/13/22 14:40	1

Client Sample ID: FS08

Lab Sample ID: 890-2527-8
Matrix: Solid
Date Collected: 07/08/22 13:20
Date Received: 07/11/22 10:26
Sample Depth: 0.75

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		07/13/22 14:00	07/14/22 04:18	1
Toluene	<0.00201	U	0.00201	mg/Kg		07/13/22 14:00	07/14/22 04:18	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		07/13/22 14:00	07/14/22 04:18	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		07/13/22 14:00	07/14/22 04:18	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		07/13/22 14:00	07/14/22 04:18	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		07/13/22 14:00	07/14/22 04:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*07/13/22 14:00*	*07/14/22 04:18*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*07/13/22 14:00*	*07/14/22 04:18*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			07/14/22 10:14	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			07/13/22 09:45	1

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Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS08

Lab Sample ID: 890-2527-8
Matrix: Solid
Date Collected: 07/08/22 13:20
Date Received: 07/11/22 10:26
Sample Depth: 0.75

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 23:59	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 23:59	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/12/22 23:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*07/12/22 14:20*	*07/12/22 23:59*	*1*
o-Terphenyl	*112*		*70 - 130*	*07/12/22 14:20*	*07/12/22 23:59*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10.6**		4.97		mg/Kg			07/13/22 15:03	1

Surrogate Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-2526-A-1-F MS	Matrix Spike	101	99
890-2526-A-1-G MSD	Matrix Spike Duplicate	103	99
890-2527-1	FS01	107	98
890-2527-2	FS02	103	92
890-2527-3	FS03	103	98
890-2527-4	FS04	110	95
890-2527-5	FS05	102	94
890-2527-6	FS06	109	97
890-2527-7	FS07	102	96
890-2527-8	FS08	99	94
LCS 880-29670/1-A	Lab Control Sample	96	97
LCSD 880-29670/2-A	Lab Control Sample Dup	101	96
MB 880-29558/5-A	Method Blank	96	99
MB 880-29670/5-A	Method Blank	95	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-2527-1	FS01	98	108
890-2527-1 MS	FS01	81	78
890-2527-1 MSD	FS01	80	80
890-2527-2	FS02	91	100
890-2527-3	FS03	92	96
890-2527-4 - RA4	FS04	84	91
890-2527-5	FS05	94	96
890-2527-6	FS06	90	95
890-2527-7	FS07	88	97
890-2527-8	FS08	105	112
LCS 880-29556/2-A	Lab Control Sample	99	109
LCSD 880-29556/3-A	Lab Control Sample Dup	95	101
MB 880-29556/1-A	Method Blank	112	117

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-29558/5-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29558

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/12/22 14:57	07/13/22 10:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*07/12/22 14:57*	*07/13/22 10:58*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*07/12/22 14:57*	*07/13/22 10:58*	*1*

Lab Sample ID: MB 880-29670/5-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29670

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/13/22 14:00	07/13/22 22:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*07/13/22 14:00*	*07/13/22 22:36*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*07/13/22 14:00*	*07/13/22 22:36*	*1*

Lab Sample ID: LCS 880-29670/1-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09248		mg/Kg		92	70 - 130		
Toluene			0.100	0.08671		mg/Kg		87	70 - 130		
Ethylbenzene			0.100	0.08569		mg/Kg		86	70 - 130		
m-Xylene & p-Xylene			0.200	0.1808		mg/Kg		90	70 - 130		
o-Xylene			0.100	0.09740		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 880-29670/2-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08878		mg/Kg		89	70 - 130	4	35

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

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

Lab Sample ID: LCSD 880-29670/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29611 — **Prep Batch: 29670**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.09243		mg/Kg		92	70 - 130	6	35
Ethylbenzene			0.100	0.09135		mg/Kg		91	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1932		mg/Kg		97	70 - 130	7	35
o-Xylene			0.100	0.1042		mg/Kg		104	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 890-2526-A-1-F MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29611 — **Prep Batch: 29670**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.09321		mg/Kg		93	70 - 130
Toluene	<0.00201	U	0.0998	0.08250		mg/Kg		83	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.08098		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1700		mg/Kg		85	70 - 130
o-Xylene	<0.00201	U	0.0998	0.09364		mg/Kg		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-2526-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29611 — **Prep Batch: 29670**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.08758		mg/Kg		88	70 - 130	6	35
Toluene	<0.00201	U	0.0994	0.08365		mg/Kg		84	70 - 130	1	35
Ethylbenzene	<0.00201	U	0.0994	0.08315		mg/Kg		84	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1762		mg/Kg		89	70 - 130	4	35
o-Xylene	<0.00201	U	0.0994	0.09699		mg/Kg		98	70 - 130	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

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

Lab Sample ID: MB 880-29556/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

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		07/12/22 14:20	07/12/22 19:42	1

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

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

Lab Sample ID: MB 880-29556/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

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		07/12/22 14:20	07/12/22 19:42	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*07/12/22 14:20*	*07/12/22 19:42*	*1*
o-Terphenyl	*117*		*70 - 130*	*07/12/22 14:20*	*07/12/22 19:42*	*1*

Lab Sample ID: LCS 880-29556/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1074		mg/Kg		107	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	917.3		mg/Kg		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*109*		*70 - 130*

Lab Sample ID: LCSD 880-29556/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	951.6		mg/Kg		95	70 - 130	12	20
Diesel Range Organics (Over C10-C28)			1000	889.0		mg/Kg		89	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

Lab Sample ID: 890-2527-1 MS — **Client Sample ID: FS01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

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	996	887.1		mg/Kg		89	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	996	682.2	F1	mg/Kg		68	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*81*		*70 - 130*
o-Terphenyl	*78*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

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

Lab Sample ID: 890-2527-1 MSD — **Client Sample ID: FS01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 29497 — **Prep Batch: 29556**

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	881.1		mg/Kg		88	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	708.4		mg/Kg		71	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*80*		*70 - 130*
o-Terphenyl	*80*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-29459/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/13/22 09:28	1

Lab Sample ID: LCS 880-29459/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	241.0		mg/Kg		96	90 - 110		

Lab Sample ID: LCSD 880-29459/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.1		mg/Kg		97	90 - 110	1	20

Lab Sample ID: 890-2527-7 MS — **Client Sample ID: FS07**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	35.1		251	290.2		mg/Kg		102	90 - 110		

Lab Sample ID: 890-2527-7 MSD — **Client Sample ID: FS07**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 29599

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	35.1		251	291.0		mg/Kg		102	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

GC VOA

Prep Batch: 29558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-29558/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 29611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Total/NA	Solid	8021B	29670
890-2527-2	FS02	Total/NA	Solid	8021B	29670
890-2527-3	FS03	Total/NA	Solid	8021B	29670
890-2527-4	FS04	Total/NA	Solid	8021B	29670
890-2527-5	FS05	Total/NA	Solid	8021B	29670
890-2527-6	FS06	Total/NA	Solid	8021B	29670
890-2527-7	FS07	Total/NA	Solid	8021B	29670
890-2527-8	FS08	Total/NA	Solid	8021B	29670
MB 880-29558/5-A	Method Blank	Total/NA	Solid	8021B	29558
MB 880-29670/5-A	Method Blank	Total/NA	Solid	8021B	29670
LCS 880-29670/1-A	Lab Control Sample	Total/NA	Solid	8021B	29670
LCSD 880-29670/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	29670
890-2526-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	29670
890-2526-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	29670

Prep Batch: 29670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Total/NA	Solid	5035	
890-2527-2	FS02	Total/NA	Solid	5035	
890-2527-3	FS03	Total/NA	Solid	5035	
890-2527-4	FS04	Total/NA	Solid	5035	
890-2527-5	FS05	Total/NA	Solid	5035	
890-2527-6	FS06	Total/NA	Solid	5035	
890-2527-7	FS07	Total/NA	Solid	5035	
890-2527-8	FS08	Total/NA	Solid	5035	
MB 880-29670/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-29670/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-29670/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2526-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2526-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 29741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Total/NA	Solid	Total BTEX	
890-2527-2	FS02	Total/NA	Solid	Total BTEX	
890-2527-3	FS03	Total/NA	Solid	Total BTEX	
890-2527-4	FS04	Total/NA	Solid	Total BTEX	
890-2527-5	FS05	Total/NA	Solid	Total BTEX	
890-2527-6	FS06	Total/NA	Solid	Total BTEX	
890-2527-7	FS07	Total/NA	Solid	Total BTEX	
890-2527-8	FS08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 29497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Total/NA	Solid	8015B NM	29556

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

GC Semi VOA (Continued)

Analysis Batch: 29497 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-2	FS02	Total/NA	Solid	8015B NM	29556
890-2527-3	FS03	Total/NA	Solid	8015B NM	29556
890-2527-4 - RA4	FS04	Total/NA	Solid	8015B NM	29556
890-2527-5	FS05	Total/NA	Solid	8015B NM	29556
890-2527-6	FS06	Total/NA	Solid	8015B NM	29556
890-2527-7	FS07	Total/NA	Solid	8015B NM	29556
890-2527-8	FS08	Total/NA	Solid	8015B NM	29556
MB 880-29556/1-A	Method Blank	Total/NA	Solid	8015B NM	29556
LCS 880-29556/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	29556
LCSD 880-29556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	29556
890-2527-1 MS	FS01	Total/NA	Solid	8015B NM	29556
890-2527-1 MSD	FS01	Total/NA	Solid	8015B NM	29556

Prep Batch: 29556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Total/NA	Solid	8015NM Prep	
890-2527-2	FS02	Total/NA	Solid	8015NM Prep	
890-2527-3	FS03	Total/NA	Solid	8015NM Prep	
890-2527-4 - RA4	FS04	Total/NA	Solid	8015NM Prep	
890-2527-5	FS05	Total/NA	Solid	8015NM Prep	
890-2527-6	FS06	Total/NA	Solid	8015NM Prep	
890-2527-7	FS07	Total/NA	Solid	8015NM Prep	
890-2527-8	FS08	Total/NA	Solid	8015NM Prep	
MB 880-29556/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-29556/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-29556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2527-1 MS	FS01	Total/NA	Solid	8015NM Prep	
890-2527-1 MSD	FS01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 29631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Total/NA	Solid	8015 NM	
890-2527-2	FS02	Total/NA	Solid	8015 NM	
890-2527-3	FS03	Total/NA	Solid	8015 NM	
890-2527-4	FS04	Total/NA	Solid	8015 NM	
890-2527-5	FS05	Total/NA	Solid	8015 NM	
890-2527-6	FS06	Total/NA	Solid	8015 NM	
890-2527-7	FS07	Total/NA	Solid	8015 NM	
890-2527-8	FS08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 29459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Soluble	Solid	DI Leach	
890-2527-2	FS02	Soluble	Solid	DI Leach	
890-2527-3	FS03	Soluble	Solid	DI Leach	
890-2527-4	FS04	Soluble	Solid	DI Leach	
890-2527-5	FS05	Soluble	Solid	DI Leach	
890-2527-6	FS06	Soluble	Solid	DI Leach	
890-2527-7	FS07	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

HPLC/IC (Continued)

Leach Batch: 29459 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-8	FS08	Soluble	Solid	DI Leach	
MB 880-29459/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-29459/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-29459/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2527-7 MS	FS07	Soluble	Solid	DI Leach	
890-2527-7 MSD	FS07	Soluble	Solid	DI Leach	

Analysis Batch: 29599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2527-1	FS01	Soluble	Solid	300.0	29459
890-2527-2	FS02	Soluble	Solid	300.0	29459
890-2527-3	FS03	Soluble	Solid	300.0	29459
890-2527-4	FS04	Soluble	Solid	300.0	29459
890-2527-5	FS05	Soluble	Solid	300.0	29459
890-2527-6	FS06	Soluble	Solid	300.0	29459
890-2527-7	FS07	Soluble	Solid	300.0	29459
890-2527-8	FS08	Soluble	Solid	300.0	29459
MB 880-29459/1-A	Method Blank	Soluble	Solid	300.0	29459
LCS 880-29459/2-A	Lab Control Sample	Soluble	Solid	300.0	29459
LCSD 880-29459/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	29459
890-2527-7 MS	FS07	Soluble	Solid	300.0	29459
890-2527-7 MSD	FS07	Soluble	Solid	300.0	29459

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS01

Lab Sample ID: 890-2527-1

Date Collected: 07/07/22 14:40
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 00:26	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 20:46	SM	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 11:55	CH	XEN MID

Client Sample ID: FS02

Lab Sample ID: 890-2527-2

Date Collected: 07/07/22 14:45
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 00:47	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 21:50	SM	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 12:18	CH	XEN MID

Client Sample ID: FS03

Lab Sample ID: 890-2527-3

Date Collected: 07/07/22 14:50
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 01:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 22:11	SM	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 12:26	CH	XEN MID

Client Sample ID: FS04

Lab Sample ID: 890-2527-4

Date Collected: 07/07/22 14:55
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 01:27	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS04

Date Collected: 07/07/22 14:55
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2527-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep	RA4		10.03 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM	RA4	1			29497	07/12/22 22:33	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 14:16	CH	XEN MID

Client Sample ID: FS05

Date Collected: 07/07/22 15:00
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2527-5

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 01:48	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 22:54	SM	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 14:24	CH	XEN MID

Client Sample ID: FS06

Date Collected: 07/07/22 15:05
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2527-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 02:08	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 23:16	SM	XEN MID
Soluble	Leach	DI Leach			5.00 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 14:32	CH	XEN MID

Client Sample ID: FS07

Date Collected: 07/08/22 13:15
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2527-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 03:58	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 23:37	SM	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Client Sample ID: FS07

Lab Sample ID: 890-2527-7

Date Collected: 07/08/22 13:15
Matrix: Solid
Date Received: 07/11/22 10:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 14:40	CH	XEN MID

Client Sample ID: FS08

Lab Sample ID: 890-2527-8

Date Collected: 07/08/22 13:20
Matrix: Solid
Date Received: 07/11/22 10:26

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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 04:18	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29741	07/14/22 10:14	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29631	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/12/22 23:59	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 15:03	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

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: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2527-1
SDG: 03D2024001

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2527-1	FS01	Solid	07/07/22 14:40	07/11/22 10:26	0.75
890-2527-2	FS02	Solid	07/07/22 14:45	07/11/22 10:26	0.75
890-2527-3	FS03	Solid	07/07/22 14:50	07/11/22 10:26	0.75
890-2527-4	FS04	Solid	07/07/22 14:55	07/11/22 10:26	0.75
890-2527-5	FS05	Solid	07/07/22 15:00	07/11/22 10:26	0.75
890-2527-6	FS06	Solid	07/07/22 15:05	07/11/22 10:26	0.75
890-2527-7	FS07	Solid	07/08/22 13:15	07/11/22 10:26	0.75
890-2527-8	FS08	Solid	07/08/22 13:20	07/11/22 10:26	0.75

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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: _____

www.xenco.com Page 1 of 1

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

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:	Columbus 021H & 022H CTB	Turn Around	
Project Number:	03D2024001	☐ Routine ☑ Rush	
Project Location:		Due Date:	3 Day TAT
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:	TA1402	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4	
Total Containers:		Corrected Temperature:	5.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8016)	BTEX (8021)
FS01	S	07.07.22	1440	0.75'	C	1		x	x	x
FS02	S	07.07.22	1445	0.75'	C	1		x	x	x
FS03	S	07.07.22	1450	0.75'	C	1		x	x	x
FS04	S	07.07.22	1455	0.75'	C	1		x	x	x
FS05	S	07.07.22	1500	0.75'	C	1		x	x	x
FS06	S	07.07.22	1505	0.75'	C	1		x	x	x
FS07	S	07.08.22	1315	0.75'	C	1		x	x	x
FS08	S	07.08.22	1320	0.75'	C	1		x	x	x

890-2527 Chain of Custody

Preservative Codes

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

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	Amanda Stuff	7/11/22 10:26			
3			4		
5			6		

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2527-1
SDG Number: 03D2024001

Login Number: 2527
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2527-1
SDG Number: 03D2024001

Login Number: 2527
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/12/22 11:11 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: 890-2528-1
Laboratory Sample Delivery Group: 03D2024001
Client Project/Site: COLUMBUS 021H & 022H CTB
Revision: 1

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
7/18/2022 2:52:16 PM

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

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

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

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Laboratory Job ID: 890-2528-1
SDG: 03D2024001

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Definitions/Glossary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Job ID: 890-2528-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2528-1

REVISION

The report being provided is a revision of the original report sent on 7/14/2022. The report (revision 1) is being revised due to Per client email, requested sample ID changes.

Report revision history

Receipt
The samples were received on 7/11/2022 10:26 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

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

GC Semi VOA
Method 8015MOD_NM: The matrix spike (MS) recoveries for preparation batch 880-29556 and analytical batch 880-29497 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH01

Date Collected: 07/08/22 11:50
Date Received: 07/11/22 10:26
Sample Depth: 1

Lab Sample ID: 890-2528-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 08:52	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 08:52	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 08:52	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 08:52	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 08:52	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 08:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*07/13/22 14:00*	*07/14/22 08:52*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*07/13/22 14:00*	*07/14/22 08:52*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 02:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 02:07	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*07/12/22 14:20*	*07/13/22 02:07*	*1*
o-Terphenyl	*102*		*70 - 130*	*07/12/22 14:20*	*07/13/22 02:07*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.99	U	4.99		mg/Kg			07/13/22 15:11	1

Client Sample ID: PH01A

Date Collected: 07/08/22 11:55
Date Received: 07/11/22 10:26
Sample Depth: 2

Lab Sample ID: 890-2528-2

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 09:12	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 09:12	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 09:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 09:12	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/13/22 14:00	07/14/22 09:12	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/13/22 14:00	07/14/22 09:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*07/13/22 14:00*	*07/14/22 09:12*	*1*

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH01A

Date Collected: 07/08/22 11:55
Date Received: 07/11/22 10:26
Sample Depth: 2

Lab Sample ID: 890-2528-2

Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*07/13/22 14:00*	*07/14/22 09:12*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 02:29	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 02:29	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 02:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*106*		*70 - 130*	*07/12/22 14:20*	*07/13/22 02:29*	*1*
o-Terphenyl	*110*		*70 - 130*	*07/12/22 14:20*	*07/13/22 02:29*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.96	U	4.96		mg/Kg			07/13/22 15:35	1

Client Sample ID: PH02

Date Collected: 07/08/22 12:00
Date Received: 07/11/22 10:26
Sample Depth: 1

Lab Sample ID: 890-2528-3

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:33	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 09:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:33	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 09:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*07/13/22 14:00*	*07/14/22 09:33*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*07/13/22 14:00*	*07/14/22 09:33*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/13/22 09:45	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH02

Date Collected: 07/08/22 12:00
Date Received: 07/11/22 10:26
Sample Depth: 1

Lab Sample ID: 890-2528-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 02:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 02:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 02:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*07/12/22 14:20*	*07/13/22 02:50*	*1*
o-Terphenyl	*123*		*70 - 130*	*07/12/22 14:20*	*07/13/22 02:50*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16.1**		5.04		mg/Kg			07/13/22 15:43	1

Client Sample ID: PH02A

Date Collected: 07/08/22 12:05
Date Received: 07/11/22 10:26
Sample Depth: 2

Lab Sample ID: 890-2528-4

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:53	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/13/22 14:00	07/14/22 09:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 09:53	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/13/22 14:00	07/14/22 09:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*07/13/22 14:00*	*07/14/22 09:53*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*07/13/22 14:00*	*07/14/22 09:53*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 03:12	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 03:12	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*07/12/22 14:20*	*07/13/22 03:12*	*1*
o-Terphenyl	*87*		*70 - 130*	*07/12/22 14:20*	*07/13/22 03:12*	*1*

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH02A

Lab Sample ID: 890-2528-4
Matrix: Solid
Date Collected: 07/08/22 12:05
Date Received: 07/11/22 10:26
Sample Depth: 2

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.9		4.97		mg/Kg			07/13/22 15:50	1

Client Sample ID: PH03

Lab Sample ID: 890-2528-5
Matrix: Solid
Date Collected: 07/08/22 12:10
Date Received: 07/11/22 10:26
Sample Depth: 1

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/14/22 10:14	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/14/22 10:14	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/14/22 10:14	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/13/22 14:00	07/14/22 10:14	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/13/22 14:00	07/14/22 10:14	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/13/22 14:00	07/14/22 10:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*07/13/22 14:00*	*07/14/22 10:14*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*07/13/22 14:00*	*07/14/22 10:14*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			07/14/22 14:30	1

Method: 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			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/12/22 14:20	07/13/22 03:33	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		07/12/22 14:20	07/13/22 03:33	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/12/22 14:20	07/13/22 03:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*07/12/22 14:20*	*07/13/22 03:33*	*1*
o-Terphenyl	*100*		*70 - 130*	*07/12/22 14:20*	*07/13/22 03:33*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.03	U	5.03		mg/Kg			07/13/22 15:58	1

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH03A

Date Collected: 07/08/22 12:15
Date Received: 07/11/22 10:26
Sample Depth: 2

Lab Sample ID: 890-2528-6

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 10:34	1
Toluene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 10:34	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 10:34	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		07/13/22 14:00	07/14/22 10:34	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 10:34	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		07/13/22 14:00	07/14/22 10:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*07/13/22 14:00*	*07/14/22 10:34*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*07/13/22 14:00*	*07/14/22 10:34*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 03:54	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 03:54	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 03:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*07/12/22 14:20*	*07/13/22 03:54*	*1*
o-Terphenyl	*108*		*70 - 130*	*07/12/22 14:20*	*07/13/22 03:54*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.16**		5.02		mg/Kg			07/13/22 16:06	1

Client Sample ID: PH04

Date Collected: 07/08/22 12:20
Date Received: 07/11/22 10:26
Sample Depth: 1

Lab Sample ID: 890-2528-7

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 10:55	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 10:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 10:55	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 10:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/14/22 10:55	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/13/22 14:00	07/14/22 10:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*07/13/22 14:00*	*07/14/22 10:55*	*1*

Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH04

Date Collected: 07/08/22 12:20
Date Received: 07/11/22 10:26
Sample Depth: 1

Lab Sample ID: 890-2528-7

Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*07/13/22 14:00*	*07/14/22 10:55*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/13/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 04:16	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 04:16	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/12/22 14:20	07/13/22 04:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*89*		*70 - 130*	*07/12/22 14:20*	*07/13/22 04:16*	*1*
o-Terphenyl	*92*		*70 - 130*	*07/12/22 14:20*	*07/13/22 04:16*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.02	U	5.02		mg/Kg			07/13/22 16:14	1

Client Sample ID: PH04A

Date Collected: 07/08/22 12:25
Date Received: 07/11/22 10:26
Sample Depth: 2

Lab Sample ID: 890-2528-8

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 11:15	1
Toluene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 11:15	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 11:15	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		07/13/22 14:00	07/14/22 11:15	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		07/13/22 14:00	07/14/22 11:15	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		07/13/22 14:00	07/14/22 11:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*07/13/22 14:00*	*07/14/22 11:15*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*07/13/22 14:00*	*07/14/22 11:15*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			07/14/22 14:30	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/13/22 09:45	1

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Client Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH04A

Date Collected: 07/08/22 12:25
Date Received: 07/11/22 10:26
Sample Depth: 2

Lab Sample ID: 890-2528-8

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 04:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 04:38	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/13/22 04:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*07/12/22 14:20*	*07/13/22 04:38*	*1*
o-Terphenyl	*87*		*70 - 130*	*07/12/22 14:20*	*07/13/22 04:38*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.97	U	4.97		mg/Kg			07/13/22 16:22	1

Surrogate Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-2526-A-1-F MS	Matrix Spike	101	99
890-2526-A-1-G MSD	Matrix Spike Duplicate	103	99
890-2528-1	PH01	100	81
890-2528-2	PH01A	106	97
890-2528-3	PH02	106	102
890-2528-4	PH02A	102	101
890-2528-5	PH03	103	98
890-2528-6	PH03A	100	97
890-2528-7	PH04	103	98
890-2528-8	PH04A	104	100
LCS 880-29670/1-A	Lab Control Sample	96	97
LCSD 880-29670/2-A	Lab Control Sample Dup	101	96
MB 880-29558/5-A	Method Blank	96	99
MB 880-29670/5-A	Method Blank	95	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-2527-A-1-C MS	Matrix Spike	81	78
890-2527-A-1-D MSD	Matrix Spike Duplicate	80	80
890-2528-1	PH01	102	102
890-2528-2	PH01A	106	110
890-2528-3	PH02	113	123
890-2528-4	PH02A	86	87
890-2528-5	PH03	97	100
890-2528-6	PH03A	104	108
890-2528-7	PH04	89	92
890-2528-8	PH04A	83	87
LCS 880-29556/2-A	Lab Control Sample	99	109
LCSD 880-29556/3-A	Lab Control Sample Dup	95	101
MB 880-29556/1-A	Method Blank	112	117

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-29558/5-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29558

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/12/22 14:57	07/13/22 10:58	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/12/22 14:57	07/13/22 10:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*07/12/22 14:57*	*07/13/22 10:58*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*07/12/22 14:57*	*07/13/22 10:58*	*1*

Lab Sample ID: MB 880-29670/5-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29670

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/13/22 14:00	07/13/22 22:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/13/22 14:00	07/13/22 22:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*07/13/22 14:00*	*07/13/22 22:36*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*07/13/22 14:00*	*07/13/22 22:36*	*1*

Lab Sample ID: LCS 880-29670/1-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09248		mg/Kg		92	70 - 130		
Toluene			0.100	0.08671		mg/Kg		87	70 - 130		
Ethylbenzene			0.100	0.08569		mg/Kg		86	70 - 130		
m-Xylene & p-Xylene			0.200	0.1808		mg/Kg		90	70 - 130		
o-Xylene			0.100	0.09740		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 880-29670/2-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08878		mg/Kg		89	70 - 130	4	35

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

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

Lab Sample ID: LCSD 880-29670/2-A
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29670

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.09243		mg/Kg		92	70 - 130	6	35
Ethylbenzene			0.100	0.09135		mg/Kg		91	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.1932		mg/Kg		97	70 - 130	7	35
o-Xylene			0.100	0.1042		mg/Kg		104	70 - 130	7	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 890-2526-A-1-F MS
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29670

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0998	0.09321		mg/Kg		93	70 - 130
Toluene	<0.00201	U	0.0998	0.08250		mg/Kg		83	70 - 130
Ethylbenzene	<0.00201	U	0.0998	0.08098		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1700		mg/Kg		85	70 - 130
o-Xylene	<0.00201	U	0.0998	0.09364		mg/Kg		94	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-2526-A-1-G MSD
Matrix: Solid
Analysis Batch: 29611

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 29670

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0994	0.08758		mg/Kg		88	70 - 130	6	35
Toluene	<0.00201	U	0.0994	0.08365		mg/Kg		84	70 - 130	1	35
Ethylbenzene	<0.00201	U	0.0994	0.08315		mg/Kg		84	70 - 130	3	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1762		mg/Kg		89	70 - 130	4	35
o-Xylene	<0.00201	U	0.0994	0.09699		mg/Kg		98	70 - 130	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

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

Lab Sample ID: MB 880-29556/1-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29556

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		07/12/22 14:20	07/12/22 19:42	1

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

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

Lab Sample ID: MB 880-29556/1-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 29556

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		07/12/22 14:20	07/12/22 19:42	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/12/22 14:20	07/12/22 19:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*07/12/22 14:20*	*07/12/22 19:42*	*1*
o-Terphenyl	*117*		*70 - 130*	*07/12/22 14:20*	*07/12/22 19:42*	*1*

Lab Sample ID: LCS 880-29556/2-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 29556

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1074		mg/Kg		107	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	917.3		mg/Kg		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*99*		*70 - 130*
o-Terphenyl	*109*		*70 - 130*

Lab Sample ID: LCSD 880-29556/3-A
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 29556

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	951.6		mg/Kg		95	70 - 130	12	20
Diesel Range Organics (Over C10-C28)			1000	889.0		mg/Kg		89	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

Lab Sample ID: 890-2527-A-1-C MS
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 29556

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	996	887.1		mg/Kg		89	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	996	682.2	F1	mg/Kg		68	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*81*		*70 - 130*
o-Terphenyl	*78*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

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

Lab Sample ID: 890-2527-A-1-D MSD
Matrix: Solid
Analysis Batch: 29497

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 29556

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	881.1		mg/Kg		88	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	708.4		mg/Kg		71	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*80*		*70 - 130*
o-Terphenyl	*80*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-29459/1-A
Matrix: Solid
Analysis Batch: 29599

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/13/22 09:28	1

Lab Sample ID: LCS 880-29459/2-A
Matrix: Solid
Analysis Batch: 29599

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	241.0		mg/Kg		96	90 - 110		

Lab Sample ID: LCSD 880-29459/3-A
Matrix: Solid
Analysis Batch: 29599

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.1		mg/Kg		97	90 - 110	1	20

Lab Sample ID: 890-2527-A-7-E MS
Matrix: Solid
Analysis Batch: 29599

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	35.1		251	290.2		mg/Kg		102	90 - 110		

Lab Sample ID: 890-2527-A-7-F MSD
Matrix: Solid
Analysis Batch: 29599

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	35.1		251	291.0		mg/Kg		102	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

GC VOA

Prep Batch: 29558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-29558/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 29611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Total/NA	Solid	8021B	29670
890-2528-2	PH01A	Total/NA	Solid	8021B	29670
890-2528-3	PH02	Total/NA	Solid	8021B	29670
890-2528-4	PH02A	Total/NA	Solid	8021B	29670
890-2528-5	PH03	Total/NA	Solid	8021B	29670
890-2528-6	PH03A	Total/NA	Solid	8021B	29670
890-2528-7	PH04	Total/NA	Solid	8021B	29670
890-2528-8	PH04A	Total/NA	Solid	8021B	29670
MB 880-29558/5-A	Method Blank	Total/NA	Solid	8021B	29558
MB 880-29670/5-A	Method Blank	Total/NA	Solid	8021B	29670
LCS 880-29670/1-A	Lab Control Sample	Total/NA	Solid	8021B	29670
LCSD 880-29670/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	29670
890-2526-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	29670
890-2526-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	29670

Prep Batch: 29670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Total/NA	Solid	5035	
890-2528-2	PH01A	Total/NA	Solid	5035	
890-2528-3	PH02	Total/NA	Solid	5035	
890-2528-4	PH02A	Total/NA	Solid	5035	
890-2528-5	PH03	Total/NA	Solid	5035	
890-2528-6	PH03A	Total/NA	Solid	5035	
890-2528-7	PH04	Total/NA	Solid	5035	
890-2528-8	PH04A	Total/NA	Solid	5035	
MB 880-29670/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-29670/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-29670/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2526-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2526-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 29760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Total/NA	Solid	Total BTEX	
890-2528-2	PH01A	Total/NA	Solid	Total BTEX	
890-2528-3	PH02	Total/NA	Solid	Total BTEX	
890-2528-4	PH02A	Total/NA	Solid	Total BTEX	
890-2528-5	PH03	Total/NA	Solid	Total BTEX	
890-2528-6	PH03A	Total/NA	Solid	Total BTEX	
890-2528-7	PH04	Total/NA	Solid	Total BTEX	
890-2528-8	PH04A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 29497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Total/NA	Solid	8015B NM	29556

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

GC Semi VOA (Continued)

Analysis Batch: 29497 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-2	PH01A	Total/NA	Solid	8015B NM	29556
890-2528-3	PH02	Total/NA	Solid	8015B NM	29556
890-2528-4	PH02A	Total/NA	Solid	8015B NM	29556
890-2528-5	PH03	Total/NA	Solid	8015B NM	29556
890-2528-6	PH03A	Total/NA	Solid	8015B NM	29556
890-2528-7	PH04	Total/NA	Solid	8015B NM	29556
890-2528-8	PH04A	Total/NA	Solid	8015B NM	29556
MB 880-29556/1-A	Method Blank	Total/NA	Solid	8015B NM	29556
LCS 880-29556/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	29556
LCSD 880-29556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	29556
890-2527-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	29556
890-2527-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	29556

Prep Batch: 29556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Total/NA	Solid	8015NM Prep	
890-2528-2	PH01A	Total/NA	Solid	8015NM Prep	
890-2528-3	PH02	Total/NA	Solid	8015NM Prep	
890-2528-4	PH02A	Total/NA	Solid	8015NM Prep	
890-2528-5	PH03	Total/NA	Solid	8015NM Prep	
890-2528-6	PH03A	Total/NA	Solid	8015NM Prep	
890-2528-7	PH04	Total/NA	Solid	8015NM Prep	
890-2528-8	PH04A	Total/NA	Solid	8015NM Prep	
MB 880-29556/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-29556/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-29556/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2527-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2527-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 29633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Total/NA	Solid	8015 NM	
890-2528-2	PH01A	Total/NA	Solid	8015 NM	
890-2528-3	PH02	Total/NA	Solid	8015 NM	
890-2528-4	PH02A	Total/NA	Solid	8015 NM	
890-2528-5	PH03	Total/NA	Solid	8015 NM	
890-2528-6	PH03A	Total/NA	Solid	8015 NM	
890-2528-7	PH04	Total/NA	Solid	8015 NM	
890-2528-8	PH04A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 29459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Soluble	Solid	DI Leach	
890-2528-2	PH01A	Soluble	Solid	DI Leach	
890-2528-3	PH02	Soluble	Solid	DI Leach	
890-2528-4	PH02A	Soluble	Solid	DI Leach	
890-2528-5	PH03	Soluble	Solid	DI Leach	
890-2528-6	PH03A	Soluble	Solid	DI Leach	
890-2528-7	PH04	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

HPLC/IC (Continued)

Leach Batch: 29459 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-8	PH04A	Soluble	Solid	DI Leach	
MB 880-29459/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-29459/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-29459/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2527-A-7-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2527-A-7-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 29599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2528-1	PH01	Soluble	Solid	300.0	29459
890-2528-2	PH01A	Soluble	Solid	300.0	29459
890-2528-3	PH02	Soluble	Solid	300.0	29459
890-2528-4	PH02A	Soluble	Solid	300.0	29459
890-2528-5	PH03	Soluble	Solid	300.0	29459
890-2528-6	PH03A	Soluble	Solid	300.0	29459
890-2528-7	PH04	Soluble	Solid	300.0	29459
890-2528-8	PH04A	Soluble	Solid	300.0	29459
MB 880-29459/1-A	Method Blank	Soluble	Solid	300.0	29459
LCS 880-29459/2-A	Lab Control Sample	Soluble	Solid	300.0	29459
LCSD 880-29459/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	29459
890-2527-A-7-E MS	Matrix Spike	Soluble	Solid	300.0	29459
890-2527-A-7-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	29459

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH01
Date Collected: 07/08/22 11:50
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 08:52	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 02:07	SM	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 15:11	CH	XEN MID

Client Sample ID: PH01A
Date Collected: 07/08/22 11:55
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-2
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			5.03 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 09:12	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 02:29	SM	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 15:35	CH	XEN MID

Client Sample ID: PH02
Date Collected: 07/08/22 12:00
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-3
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	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 09:33	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 02:50	SM	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 15:43	CH	XEN MID

Client Sample ID: PH02A
Date Collected: 07/08/22 12:05
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 09:53	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH02A
Date Collected: 07/08/22 12:05
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 03:12	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 15:50	CH	XEN MID

Client Sample ID: PH03
Date Collected: 07/08/22 12:10
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 10:14	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 03:33	SM	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 15:58	CH	XEN MID

Client Sample ID: PH03A
Date Collected: 07/08/22 12:15
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 10:34	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 03:54	SM	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 16:06	CH	XEN MID

Client Sample ID: PH04
Date Collected: 07/08/22 12:20
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 10:55	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 04:16	SM	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Client Sample ID: PH04

Date Collected: 07/08/22 12:20
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 16:14	CH	XEN MID

Client Sample ID: PH04A

Date Collected: 07/08/22 12:25
Date Received: 07/11/22 10:26

Lab Sample ID: 890-2528-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	29670	07/13/22 14:00	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	29611	07/14/22 11:15	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			29760	07/14/22 14:30	SM	XEN MID
Total/NA	Analysis	8015 NM		1			29633	07/13/22 09:45	SM	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	29556	07/12/22 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			29497	07/13/22 04:38	SM	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	29459	07/12/22 12:00	SMC	XEN MID
Soluble	Analysis	300.0		1			29599	07/13/22 16:22	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

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: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: COLUMBUS 021H & 022H CTB

Job ID: 890-2528-1
SDG: 03D2024001

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2528-1	PH01	Solid	07/08/22 11:50	07/11/22 10:26	1
890-2528-2	PH01A	Solid	07/08/22 11:55	07/11/22 10:26	2
890-2528-3	PH02	Solid	07/08/22 12:00	07/11/22 10:26	1
890-2528-4	PH02A	Solid	07/08/22 12:05	07/11/22 10:26	2
890-2528-5	PH03	Solid	07/08/22 12:10	07/11/22 10:26	1
890-2528-6	PH03A	Solid	07/08/22 12:15	07/11/22 10:26	2
890-2528-7	PH04	Solid	07/08/22 12:20	07/11/22 10:26	1
890-2528-8	PH04A	Solid	07/08/22 12:25	07/11/22 10:26	2

eurofins | Environment Testing Xenco

Chain of Custody

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

Work Order No: _____

www.xenco.com Page 1 of 1

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

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:	Columbus 021H & 022H CTB	Turn Around	
Project Number:	03D2024001	☐ Routine ☑ Rush	
Project Location:		Due Date:	3 Day TAT
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:	TAM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.4	
Total Containers:		Corrected Temperature:	5.2	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
SS04A	S	07.08.22	1150	1'	G	1		x	x	x	
SS04B	S	07.08.22	1155	2'	G	1		x	x	x	
SS05A	S	07.08.22	1200	1'	G	1		x	x	x	
SS05B	S	07.08.22	1205	2'	G	1		x	x	x	
SS08A	S	07.08.22	1210	1'	G	1		x	x	x	
SS08B	S	07.08.22	1215	2'	G	1		x	x	x	
SS06A	S	07.08.22	1220	1'	G	1		x	x	x	
SS06B	S	07.08.22	1225	2'	G	1		x	x	x	

890-2528 Chain of Custody

Preservative Codes

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

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 Stuft	7/20/22 1024	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2528-1
SDG Number: 03D2024001

Login Number: 2528
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2528-1
SDG Number: 03D2024001

Login Number: 2528
List Number: 2
Creator: Rodriguez, Leticia

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

NMOCD Notifications

From: Nobui, Jennifer, EMNRD
To: Kalei Jennings
Cc: Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Harimon, Jocelyn, EMNRD
Subject: FW: [EXTERNAL] Sampling Notification (Week of 06/13/22-06/17/22)
Date: Wednesday, June 8, 2022 5:31:39 PM
Attachments: image001.png
image002.png
image003.png
image004.png

[**EXTERNAL EMAIL**]

Kalei

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

Thanks,
Jennifer Nobui

From: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>
Sent: Wednesday, June 8, 2022 4:21 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Harimon, Jocelyn, EMNRD <Jocelyn.Harimon@state.nm.us>
Subject: Fw: [EXTERNAL] Sampling Notification (Week of 06/13/22-06/17/22)

From: Kalei Jennings <kjennings@ensolum.com>
Sent: Wednesday, June 8, 2022 4:11 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>
Subject: [EXTERNAL] Sampling Notification (Week of 06/13/22-06/17/22)

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

All,

COP plans to complete final sampling activities at the following sites the week of June 13, 2022.

Monday

- Columbus Fed 021 & 022H CTB / NAPP2203830124

Tuesday

- Battle Axe Federal Com 002H / NAPP2134740531
- Broadcaster 29 Federal 3H / NAPP2201938653 & NAPP2132773092

- Super Cobra State Com #001H / NAPP2211531225
- Raspberry State Com 001H / NAPP2213029810

Wednesday

- Raspberry State Com 001H / NAPP2213029810
- Jaguar 18 State Com 002H & 003H / NAPP2213643210
-

Thursday

Friday

Thank you,

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

ENSOLUM

APPENDIX F

Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAPP2203830124
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Kelsy Waggaman	Contact Telephone	(432) 688-9057
Contact email	Kelsy.Waggaman@ConocoPhillips.com	Incident # *(assigned by OCD)*	NAPP2203830124
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.092222 Longitude -103.555556
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Columbus Federal 021H & 022H CTB	Site Type	Tank Battery
Date Release Discovered	January 22, 2022	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
A	34	25S	33E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* Brown Sandra Rudy ET AL)

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) 1.6	Volume Recovered (bbls) 0
☐ 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

The release was caused by a flare fire.
No fluid was recovered due to the fire burning off and standing fluid. The release resulted in a flare fire on and off the pad.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2203830124
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? The release involved a fire.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notice was given by Kelsy Waggaman via e-mail January 23, 2022 at 4:22 pm to ocd.enviro@state.nm.us.

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: Brittany N. Esparza Title: Environmental Technician

Signature: Brittany Esparza Date: 2/7/2022

email: Brittany.Esparza@ConocoPhillips.com Telephone: (432) 221-0398

OCD Only

Received by: Ramona Marcus Date: 2/13/2022

L48 Spill Volume Estimate Form

NAPP2203830124

Facility Name & Number:	Columbus Fee 21-22
Asset Area:	DBE North
Release Discovery Date & Time:	1/22/2022 0:30
Release Type:	Oil
Provide any known details about the event:	Appears heater lost pressure and sent fluid down gas line to flare

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	162.0	33.0	0.10	15.12%	7.930	1.199
Rectangle B	81.0	33.0	0.10	10.50%	3.965	0.416
Rectangle C					0.000	0.000
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
Rectangle J					0.000	0.000
					Total Volume Release:	1.615

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: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 78884
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rmarcus	None	2/13/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2203830124
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

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State of New Mexico
Oil Conservation Division

Incident ID	NAPP2203830124
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: ___Charles Beauvais_____ Title: __Senior Environmental Engineer_____

Signature: Charles R. Beauvais II Date: 07/21/2022

email: __Charles.R.Beauvais@conocophillips.com_____ Telephone: ___575-988-2043_____

OCD Only

Received by: _____ Date: _____

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State of New Mexico
Oil Conservation Division

Incident ID	NAPP2203830124
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: ___Charles Beauvais_____ Title: _Senior Environmental Engineer_____

Signature: Charles R. Beauvais II Date: 07/21/2022

email: __Charles.R.Beauvais@conocophillips.com_____ Telephone: __575-988-2043_____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Jennifer Nobui Date: 09/20/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 127936

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 127936
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	9/20/2022