Location:	PLU 30 Big Sinks CTB	
Spill Date:	3/19/2022	

Area 1		
Approximate Area =	1347.50	cu.ft.
VOLUME OF LEAK		
Total Crude Oil =	144.00	bbls
Total Produced Water =	96.00	bbls

Area 2		
Approximate Area =	5696.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches

Average Porosity Factor =	0.03	

VOLUME OF LEAK		
Total Crude Oil =	1.52	bbls
Total Produced Water =	1.01	bbls

TOTAL VOLUME OF LEAK		
Total Crude Oil =	**145.52**	**bbls**
Total Produced Water =	**97.01**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**144.00**	**bbls**
Total Produced Water =	**96.00**	**bbls**

ENSOLUM

June 28, 2024

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Deferral Request Addendum
PLU 30 Big Sinks Battery
Incident Numbers NAPP2206853301, NAPP2208351954, & NAPP2209137379
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Deferral Request Addendum (Addendum)* to document assessment, delineation, excavation, and soil sampling activities at the PLU 30 Big Sinks Battery (Site). This Addendum details the additional remediation activities completed at the Site in response to the New Mexico Oil Conservation Division (NMOCD) denial of the original *Deferral Request* and subsequent *Deferral Request Addendum*. Based on the additional remediation activities described below, XTO is submitting this *Addendum* and requesting deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until the Site is reconstructed, and/or the well pad is abandoned.

BACKGROUND

The Site is located in Unit F, Section 30, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.10395°, -103.82149°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

Incident Number NAPP2206853301

On February 24, 2022, a water dump washed out on a separator, causing the skim tank to overflow and release approximately 99.23 barrels (bbls) of crude oil into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 99 bbls of crude oil were recovered from within the lined containment. XTO reported the release to the NMOCD via email on February 25, 2022, and submitted a Release Notification Form C-141 (Form C-141) on March 9, 2022. The release was assigned Incident Number NAPP2206853301.

Incident Number NAPP2208351954

On March 14, 2022, a diaphragm failed on a 6-inch water dump, causing the skim tank to overflow and release approximately 64.2 bbls of crude oil and 16.05 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 64 bbls of crude oil and 16 bbls of produced water were recovered from within the lined

containment. XTO reported the release to the NMOCD via email on March 14, 2022, and submitted a Form C-141 on March 24, 2022. The release was assigned Incident Number NAPP2208351954.

Incident Number NAPP2209137379

On March 19, 2022, a diaphragm on a water dump failed, causing the skim tank to overflow and release approximately 145.52 bbls of crude oil and 97.01 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 144 bbls of crude oil and 96 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 19, 2022, and submitted a Form C-141 on April 1, 2022. The release was assigned Incident Number NAPP2209137379.

A *Deferral Request* submitted on May 25, 2022, detailed the Site characterization according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the Site characterization are presented in the original *Deferral Request* included in Appendix A. Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

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

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. A liner integrity inspection was conducted May 2, 2022. Upon inspection, the liner was determined to be competent. Photographic documentation was completed during the liner inspection and a photographic log is included in Appendix A. The release areas outside of containment overlapped for all three releases and were addressed concurrently.

Between April 2022 and May 2022, XTO conducted assessment, delineation, and excavation activities in response to the releases. An estimated 30 cubic yards of accessible impacted soil was excavated from the Site. To address residual petroleum hydrocarbon impacts left in place, a 5 percent (%) solution of Micro-Blaze® with freshwater was applied to the impacted area to promote natural attenuation of the hydrocarbons through biodegradation. Based on the remedial activities and laboratory analytical results from the soil sampling events, XTO submitted a Deferral Request on May 25, 2022, requesting to defer impacted soil immediately adjacent to and in between active production equipment until major facility reconstruction or abandonment.

On September 26, 2022, NMOCD denied the *Deferral Request* for Incident Number nAPP2209137379 for the following reasons:

- *The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground*

water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.

In October and November 2022 additional excavation activities were completed via hand shoveling to remove impacted soil to the maximum extent practicable (MEP). No mechanical equipment could reach the area of the impacted soil. Following excavation activities additional delineation was completed to delineate the soil as close to the secondary containment as possible. Delineation was completed with a hand auger and a rock bar; however, the maximum depth of the soil sample was 1.5 feet below ground surface (bgs) due to refusal. Following a review of the final laboratory analytical results a *Deferral Request Addendum* was submitted to NMOCD on March 6, 2023, detailing the additional remediation activities, which included installation of a depth to water boring to confirm depth to water in the region and the applicable Closure Criteria, removal of an additional 30 cubic yards of impacted soil, and further delineation soil sampling. Residual impacted soil still remained in place due to the release area being surrounded by active production equipment, tank battery containments, and surface piping which cannot be accessed mechanical equipment. Any sampling at deeper depths or additional excavation would require major facility deconstruction.

Between June 29 and July 11, 2023, XTO received three separate denials from two different regulators for differing reasons.

Incident Numbers nAPP2206853301 and nAPP2208351954

The *Deferral Request Addendum* was reviewed on July 10, and July 11, 2023, and the email response contained the following denial reasons:

- *The Deferral Request is Denied. The "step-out" samples on pad to verify the edge of the release should only be a maximum of 1-2 feet from the observed edge of the release. Stepping out away from the release area toward the edge of the pad may tell us whether or not the release left the active well pad, but it does not tell us where the actual edge of the release is located. When equipment is located in and around the release area, samples must come from the sidewalls of the release area excavation. The OCD needs to know if the release went in, around, or under equipment/tanks/pipelines. Not having sidewall samples from the actual excavation won't give us those sampling data points that we need. On future reports, "step-out" samples should only be taken a maximum of 1-2 feet from the observed edge of the release area. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area. Please conduct sidewalls in the release area excavation.*

Incident Number nAPP2209137379

The same *Deferral Request Addendum* was reviewed on June 29, 2023, and the email response contained the following denial reasons:

- *This deferral application is not approved. The release should be horizontally and vertically delineated to 600 mg/kg for chlorides 100 mg/kg TPH to define the edges of the release. Delineation samples must include lab tested analytical results. A scaled diagram of the release area was not included in this report.*

The *Deferral Request Addendum* did not contain a copy of the original *Deferral Request*; however, historically that was not required by the NMOCD and a copy of the original *Deferral Request* is readily available and accessible on the NMOCD web portal. The *Deferral Request Addendum* is included in

Appendix A and all NMOCD correspondence is included in Appendix B of this *Addendum*. XTO proceeded to complete additional soil sampling and remediation activities. The following *Addendum* includes details of the additional remediation activities.

SOIL SAMPLING ACTIVITIES

On February 1, 2024, Ensolum personnel returned to the Site to conduct soil sampling activities to confirm the lateral extent of the release. Four delineation soil samples, SS03 through SS07, were collected at 0.5 feet bgs, no more than 1-foot to 2 feet from the edge of the excavation. In addition, two sidewalls soil samples, SW01 and SW02, were collected at depths ranging from ground surface to 1-foot bgs. 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. Sidewall soil sample SW01 was collected along the excavation edge immediately adjacent to the tank battery containment and sidewall soil sample SW02 was collected on the outside edge of the excavation closest to the active production equipment and surface piping. The delineation and confirmation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The excavation extent, delineation soil sample, and confirmation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix C.

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 under strict chain-of-custody 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.

Soil was previously excavated to the MEP via hand shoveling. XTO safety policy restricts soil disturbing activities within a 2-foot radius of any on-site equipment and/or piping. Active production equipment and no mechanical equipment could access the release area, restricting the amount of soil that could be removed via hand shoveling to 1-foot bgs due to refusal. A total of approximately 60 cubic yards of impacted soil was excavated from the Site. Total TPH concentrations from confirmation samples collected in May 2022 to the October 2022 and December 2022 confirmation sampling events have reduced by an average of 62% with some areas decreasing more than 70%. Lighter end TPH in the GRO range have reduced by an average of 85% with some areas decreasing to 98%, indicating the gross impacts have been effectively remediated from the Site through excavation and the application of a bio-amendment that supports natural attenuation, which is protective of human health and the environment.

The final excavation extent measured approximately 1,075 square feet. A total of approximately 60 cubic yards of impacted soil was removed during excavation activities and was properly disposed of at the R360 Landfill Facility in Hobbs, New Mexico.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples SS03 through SS07 indicated all COC concentrations are compliant with the Closure Criteria and all delineation soil samples except SS05 are compliant with the reclamation requirement confirming the lateral extent of the release, not immediately adjacent to active production equipment. Laboratory analytical results for sidewall soil samples SW01 and SW02 indicate all COCs are in compliance with Closure Criteria. Sidewall soil sample SW02 collected on the western edge of the excavation, away from the tank containment is compliant with the

reclamation requirement and laterally defines the edge of the release. Laboratory analytical results are summarized on Table 1, and the complete laboratory analytical reports are included in Appendix D.

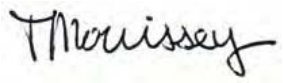
DEFERRAL REQUEST

Due to active production equipment and process piping present in the area and prohibiting access to the release area with mechanical equipment, the remaining impacted soil could not be removed, and XTO is requesting deferral of final remediation. The remaining impacted soil is delineated vertically by delineation soil samples BH02/BH02A, BH03, and BH04 to maximum depth of 1.5 feet bgs. The estimated area of remaining impacted soil measures approximately 1,075 square feet, and an estimated total of 30 cubic yards of impacted soil remains in place, assuming a depth of 1.5 feet bgs based on laboratory analytical results from the delineation soil samples. The impacted soil is limited to the area beneath and immediately adjacent to active production equipment and surface piping where remediation would require major facility deconstruction. The release extent has been laterally delineated by delineation soil samples SS03 through SS07 and excavation sidewall soil samples SW01 and SW02. The proposed deferral area and all delineation and excavation soil samples used to define the deferral area are depicted on Figure 4. The area is further defined to the reclamation requirement by delineation soil samples SS03, SS04, SS06, and SS07 collected at 0.5 feet bgs, BH01/BH01A, and PH01/PH01A through PH03/PH03A collected at depths ranging from 0.5 feet to 2 feet bgs, and confirmation soil sample SW02 collected at depths ranging from ground surface to 1-foot bgs. An estimated 800 cubic yards of soil, exceeding the reclamation requirement, remains in place around active production equipment and piping on the active well pad across an estimated area of approximately 20,000 square feet. The area will be reclaimed during major facility reconstruction or following pad abandonment.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was determined to be greater than 110 feet bgs, and the entirety of the release remained on pad. Based on the presence of active production equipment and process piping within the release area and the complete lateral and vertical definition of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until final reclamation of the well pad or major facility reconstruction, whichever comes first.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC



Tacoma Morrissey
Associate Principal

Daniel R. Moir, PG (licensed in WY & TX)
Senior Managing Geologist

cc: Amy Ruth, XTO
Amanda Garcia, XTO
BLM

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Figure 4	Deferral Area Map
Table 1	Soil Sample Analytical Results
Appendix A	Previous Reports: May 25, 2022 *Deferral Request* and March 6, 2023 *Deferral Request Addendum*
Appendix B	NMOCD Correspondence
Appendix C	Photographic Log
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation

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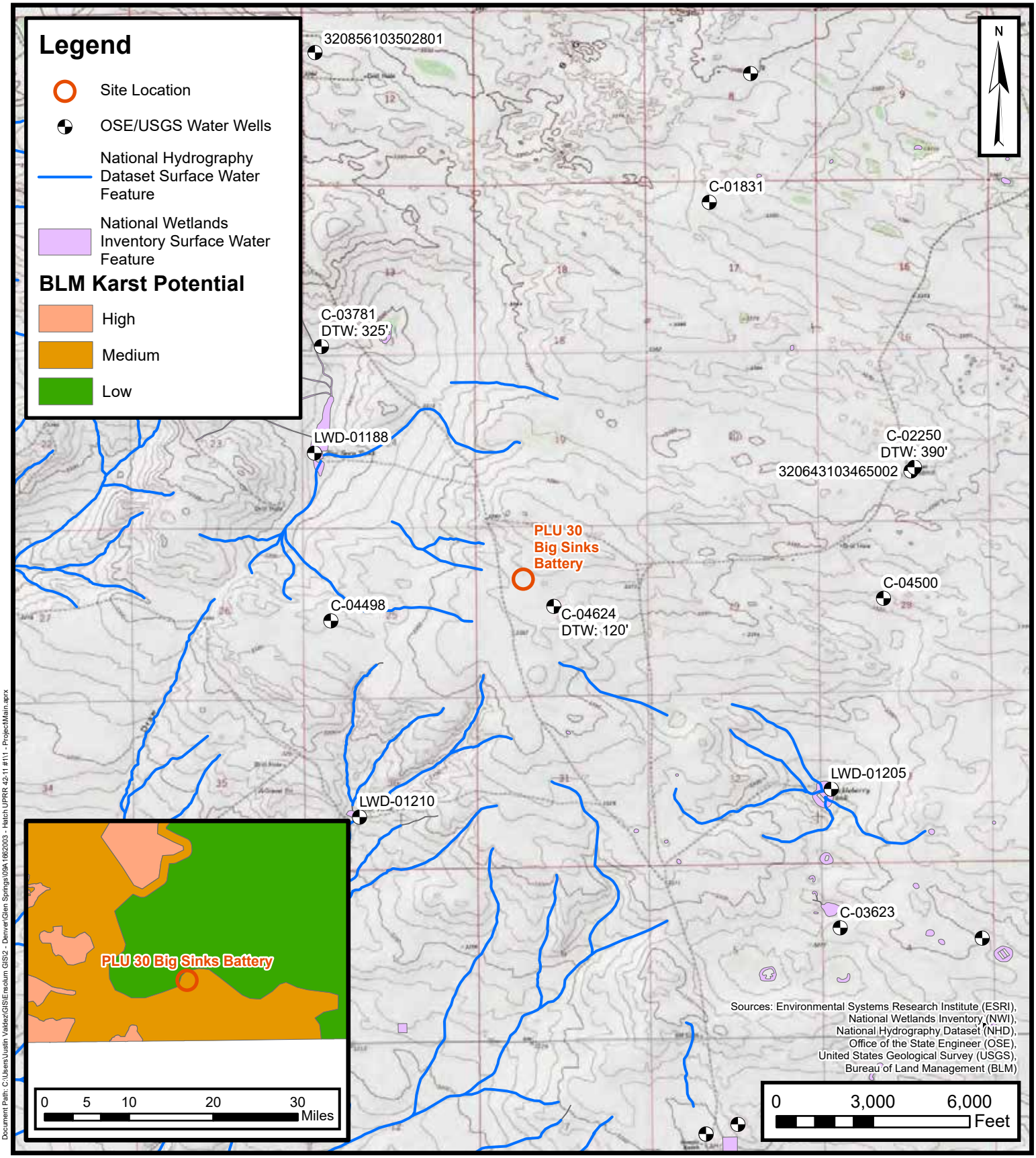
FIGURES



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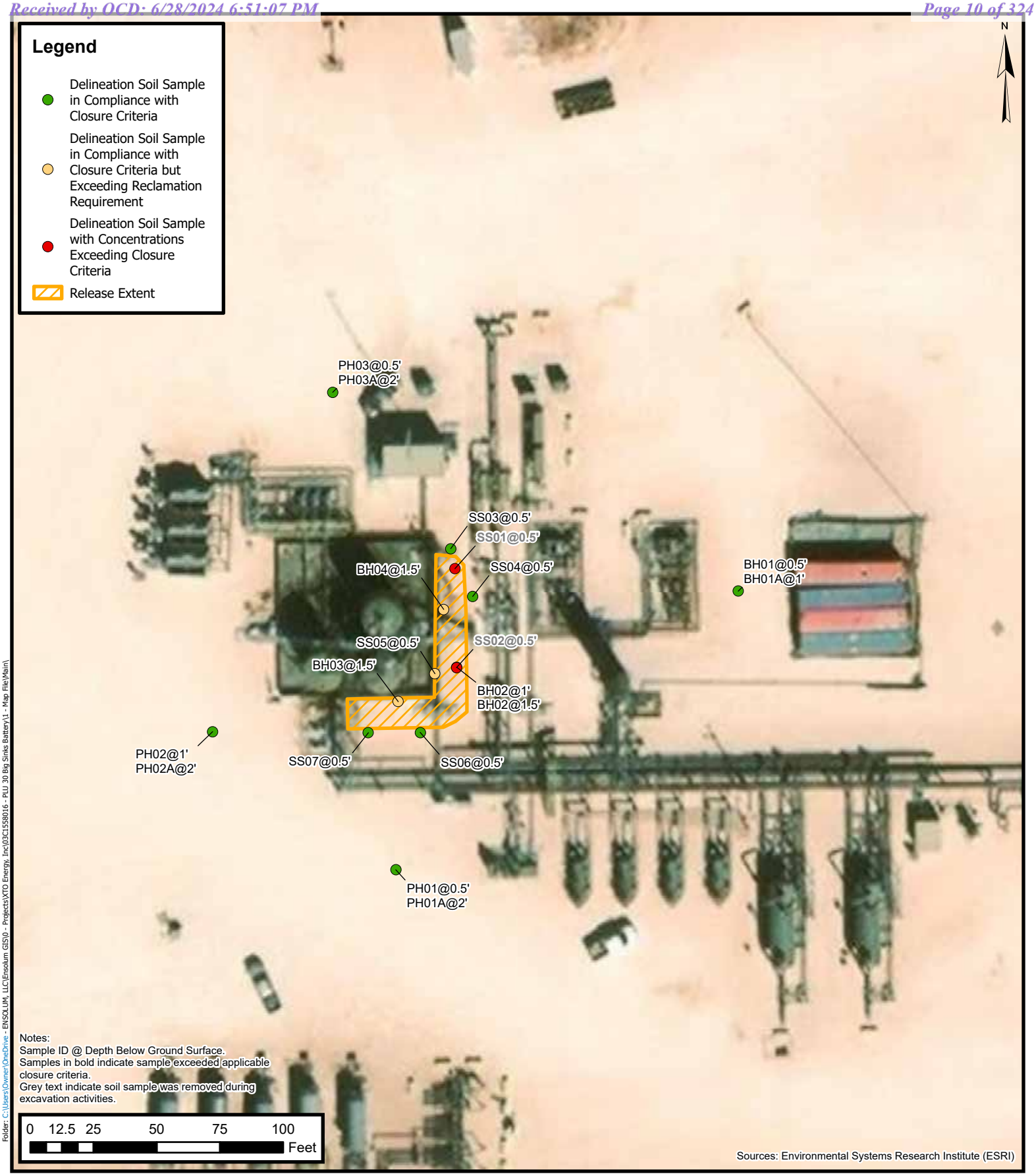
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

PLU 30 Big Sinks Battery
XTO Energy, Inc
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE

1



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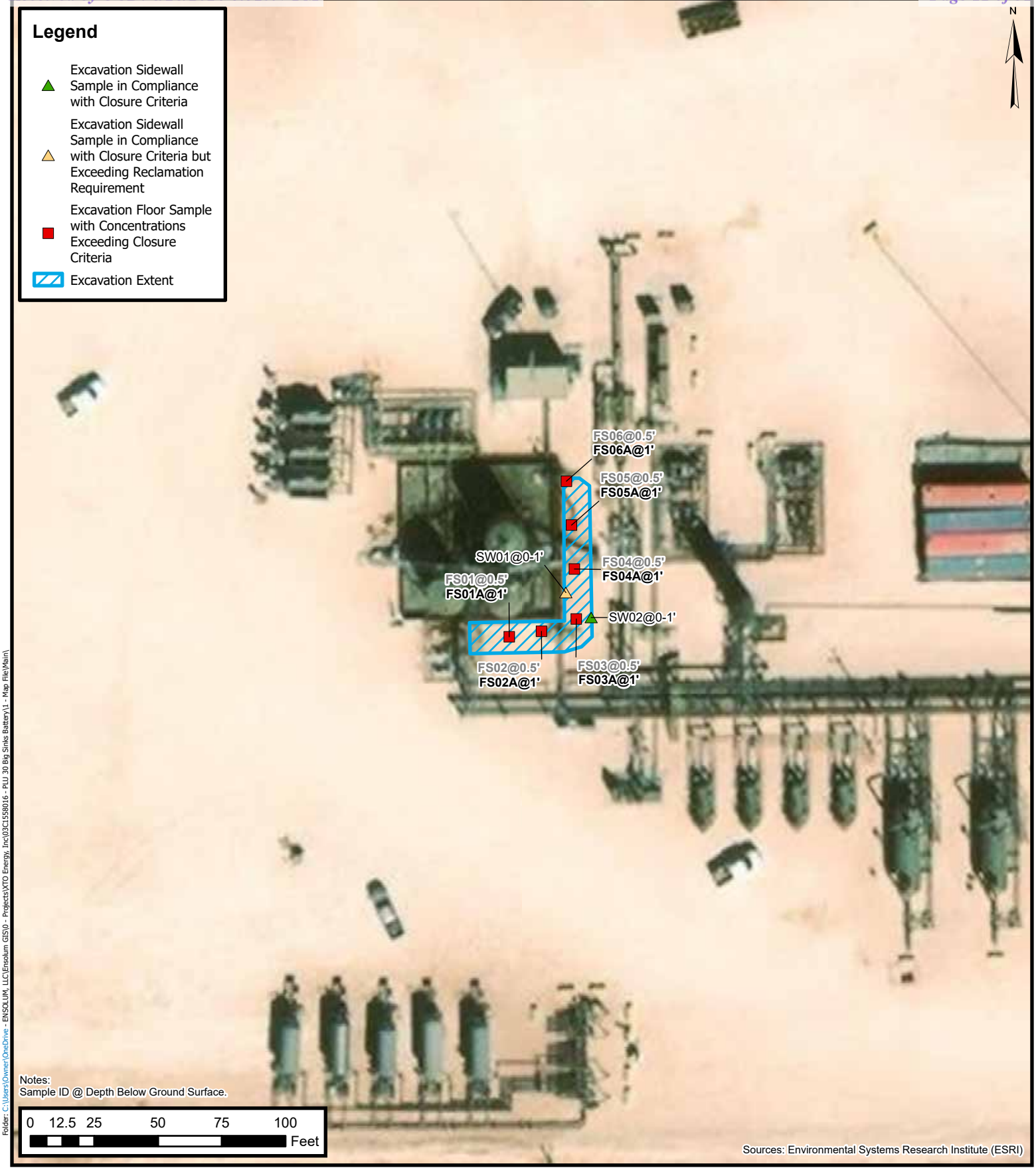
Environmental, Engineering and Hydrogeologic Consultants

Delineation Soil Sample Locations

XTO Energy, Inc
PLU 30 Big Sinks Battery
Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE 2



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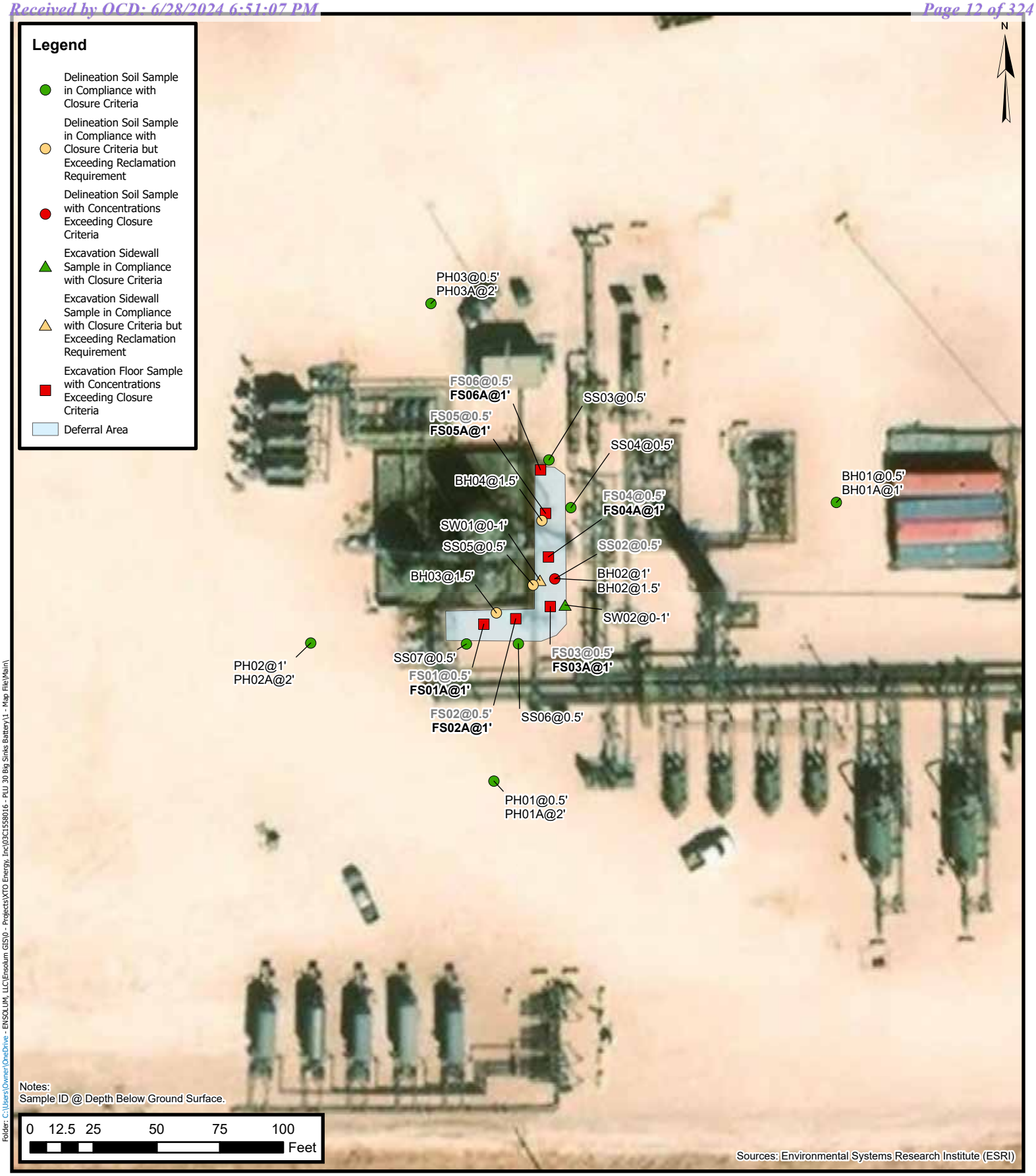
Environmental, Engineering and Hydrogeologic Consultants

Excavation Soil Sample Locations

XTO Energy, Inc
PLU 30 Big Sinks Battery
Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE 3



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Environmental, Engineering and Hydrogeologic Consultants

Deferral Area

XTO Energy, Inc
PLU 30 Big Sinks Battery
Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE 4

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 30 BIG SINKS BATTERY
XTO ENERGY, INC
EDDY 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 I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
~~SS01~~	~~04/15/2022~~	~~0.5~~	~~<0.0398~~	~~158~~	~~4,620~~	~~11,200~~	~~<250~~	~~**15,800**~~	~~**15,800**~~	~~103~~
~~SS02~~	~~04/15/2022~~	~~0.5~~	~~<0.0402~~	~~157~~	~~2,060~~	~~7,820~~	~~<49.9~~	~~**9,880**~~	~~**9,880**~~	~~448~~
SS03	02/01/2024	0.5	<0.00199	<0.00398	50.3	50.3	50.3	50.3	50.3	83.8
SS04	02/01/2024	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	78.0
SS05	02/01/2024	0.5	<0.00200	<0.00399	201	201	201	201	201	102
SS06	02/01/2024	0.5	<0.00201	<0.00402	<49.6	<49.6	<49.6	<49.6	<49.6	75.3
SS07	02/01/2024	0.5	<0.00200	<0.00401	<50.3	<50.3	<50.3	<50.3	<50.3	76.7
BH01	05/02/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
BH01A	05/02/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	14.6
BH02	05/02/2022	1	<0.00200	<0.00399	<49.9	428	60.9	428	489	26.2
BH02	05/02/2022	1.5	<0.00199	<0.00398	<50.0	110	<50.0	110	110	15.4
BH03	10/19/2022	1.5	<0.00199	<0.00398	<49.9	216	124	216	340	263
BH04	10/19/2022	1.5	<0.00200	<0.00399	63.3	377	263	440	703	201
PH01	05/02/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	85.9
PH01A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	17.0
PH02	05/02/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	76.4
PH02A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	52.1
PH03	05/02/2022	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	36.9
PH03A	05/02/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	36.3

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 30 BIG SINKS BATTERY
XTO ENERGY, INC
EDDY 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 I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Confirmation Soil Samples										
~~FS01~~	~~05/03/2022~~	~~0.5'~~	~~<0.00201~~	~~0.299~~	~~1,290~~	~~10,400~~	~~1,640~~	~~**11,700**~~	~~**13,300**~~	~~394~~
FS01A	10/19/2022	1'	<0.00201	0.0449	244	5,310	3,130	**5,550**	**8,680**	224
~~FS02~~	~~05/03/2022~~	~~0.5'~~	~~<0.00200~~	~~0.844~~	~~1,180~~	~~7,810~~	~~1,380~~	~~**8,990**~~	~~**10,400**~~	~~141~~
FS02A	10/19/2022	1'	<0.00199	0.0327	204	3,150	1,730	**3,350**	**5,080**	80.0
~~FS03~~	~~05/03/2022~~	~~0.5'~~	~~<0.00199~~	~~45.1~~	~~2,140~~	~~11,500~~	~~1,880~~	~~**13,600**~~	~~**15,500**~~	~~723~~
FS03A	10/24/2022	1'	<0.00200	0.0639	321	5,750	<49.8	**6,070**	**6,070**	62.2
~~FS04~~	~~05/03/2022~~	~~0.5'~~	~~<0.00200~~	~~1.09~~	~~2,220~~	~~14,200~~	~~2,330~~	~~**16,400**~~	~~**18,800**~~	~~790~~
FS04A	10/24/2022	1'	<0.00199	0.237	<50.0	4,540	488	**4,540**	**5,030**	107
~~FS05~~	~~05/03/2022~~	~~0.5'~~	~~0.00362~~	~~1.35~~	~~496~~	~~12,400~~	~~<250~~	~~**12,900**~~	~~**12,900**~~	~~528~~
FS05A	12/01/2022	1'	<0.00200	0.0153	84.4	4000	<50.0	**4,084**	**4,084**	39.9
~~FS06~~	~~05/03/2022~~	~~0.5'~~	~~<0.400~~	~~0.177~~	~~617~~	~~16,000~~	~~<250~~	~~**16,600**~~	~~**16,600**~~	~~106~~
FS06	12/01/2022	1'	<0.00199	0.0288	107	3,740	<50.0	**3,847**	**3,847**	18.6
SW01	02/01/2024	0-1	<0.00201	<0.00402	<248	<248	<248	<248	<248	1,040
SW02	02/01/2024	0-1	<0.00200	<0.00401	<50.5	<50.5	<50.5	<50.5	<50.5	95.9

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 I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

~~Grey~~ text indicates soil sample removed during excavation activities

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APPENDIX A

Previous Reports:
May 25, 2022 *Deferral Request* and
March 6, 2023 *Deferral Request Addendum*

ENSOLUM

May 25, 2022

District II
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

Re: Deferral Request
PLU 30 Big Sinks Battery
Incident Numbers NAPP2206853301, NAPP2208351954, & NAPP2209137379
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this Deferral Request to document site assessment and remediation activities completed at the Poker Lake Unit (PLU) 30 Big Sinks Battery (Site). The purpose of the site assessment and remediation activities was to address impacts to soil following three separate releases of crude oil and produced water in an area of active production equipment, by excavating impacted soil to the extent possible. Based on the soil sample analytical results from the excavation and delineation activities, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until the Site is reconstructed, and/or the well pad is abandoned.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit F, Section 30, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.10395° N, 103.82149°W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land.

Incident Number NAPP2206853301

On February 24, 2022, a water dump washed out on a separator, causing the skim tank to overflow and release approximately 99.23 barrels (bbls) of crude oil into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 99 bbls of crude oil were recovered from within the lined containment. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on February 25, 2022, and submitted a Release Notification Form C-141 (Form C-141) on March 9, 2022. The release was assigned Incident Number NAPP2206853301.

Incident Number NAPP2208351954

On March 14, 2022, a diaphragm failed on a 6-inch water dump, causing the skim tank to overflow and release approximately 64.2 bbls of crude oil and 16.05 bbls of produced water into lined containment

and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 64 bbls of crude oil and 16 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 14, 2022, and submitted a Form C-141 on March 24, 2022. The release was assigned Incident Number NAPP2208351954.

Incident Number NAPP2209137379

On March 19, 2022, a diaphragm on a water dump failed, causing the skim tank to overflow and release approximately 145.52 bbls of crude oil and 97.01 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 144 bbls of crude oil and 96 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 19, 2022, and submitted a Form C-141 on April 1, 2022. The release was assigned Incident Number NAPP2209137379.

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. A liner integrity inspection was conducted following fluid recovery from the third release. Upon inspection, the liner was determined to be competent (photo 3 and 4). The release areas outside of containment overlapped for all three releases and were addressed concurrently.

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 a recent soil boring drilled for determination of regional groundwater depth. During February 2021, a soil boring (C-4498) was drilled 1.0 mile west of the Site utilizing a track-mounted hollow-stem auger rig. Soil boring C-4498 was drilled to a depth of 110 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater was greater than 110 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. An additional soil boring (C-4500) was drilled to a depth of 110 feet bgs approximately 2 miles east of the Site. No groundwater was encountered in the soil boring, which provides additional support in a different direction that groundwater beneath the Site is greater than 110 feet bgs. There are no hydrological features near the Site that would indicate shallow groundwater. The referenced well records are included in Appendix A

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 952 feet west 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

SITE ASSESSMENT ACTIVITIES

On April 15, 2022, Ensolum personnel visited the Site to evaluate the release extent and conduct site assessment activities. Two preliminary assessment soil samples were collected within the release extent from a depth of 0.5 feet bgs to assess the extent of the release. The preliminary soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix B.

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 samples SS01 and SS02 indicated that BTEX, TPH-DRO/TPH-GRO, and TPH concentrations exceeded the Closure Criteria. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the preliminary soil samples, excavation and delineation activities were warranted.

DELINEATION ACTIVITIES AND ANALYTICAL RESULTS

On May 2, 2022, Ensolum personnel returned to the Site to complete delineation activities. Three potholes (PH01 through PH03) and two boreholes (BH01 and BH02) were advanced within and around the release extent to delineate the lateral and vertical extent of the release. Potholes PH01 through PH03 and borehole BH01 were advanced around the release extent to depths ranging from 1-foot to 2 feet bgs to confirm the lateral extent of the release. Borehole BH02 was advanced within the release extent to a depth of 1.5 feet bgs to confirm the vertical extent of the release. Two discrete soil samples were collected from each pothole and borehole at depths ranging from 0.5 feet bgs to 2 feet bgs. Soil from the potholes and boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes and boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil samples were handled and analyzed as described above. The delineation soil sample locations are depicted on Figure 2.

Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH03 and borehole BH01, advanced around the release extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and compliant with the most stringent Table 1 Closure Criteria. Laboratory analytical results for delineation soil samples collected from borehole BH02, advanced within the release extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Based on the laboratory analytical results, the lateral and vertical extent of the impacted soil was successfully defined.

Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D. Based on laboratory analytical results for the preliminary soil samples and field screening results from the delineation activities, excavation of impacted soil was completed to the extent possible.

EXCAVATION SOIL SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

On May 2, 2022, and May 3, 2022, excavation activities were completed via hand shoveling to remove impacted soil to the extent possible as indicated by visible staining, field screening activities, and laboratory analytical results for preliminary samples SS01 and SS02. The excavation depth was limited to an approximate depth of 0.5 bgs due to refusal with hand shovels. The release area was not accessible with mechanical equipment due to the surrounding active production equipment preventing access.

Following removal of impacted soil to the extent possible, Ensolum personnel collected 5-point composite soil samples at a frequency of 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. Composite soil samples FS01 through FS06 were collected from the floor of the excavation from a depth of 0.5 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above. The excavation extent and excavation soil sample locations are depicted on Figure 3.

Laboratory analytical results for excavation floor samples FS01 through FS06, collected at 0.5 feet bgs, indicated that TPH and TPH-GRO/TPH-DRO concentrations exceeded the Closure Criteria. Impacted soil was excavated to the maximum extent possible via hand shoveling. Due to the surrounding active production equipment, the release area was not accessible with mechanical equipment, including a hydrovac or skidsteer. Photographic documentation is included in Appendix B. To address the hydrocarbon impacts left in place, a 5 percent solution of Micro-Blaze® and freshwater was applied to the impacted area to promote degradation of the hydrocarbons.

The excavation measured approximately 1,200 square feet in area. Approximately 30 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at a permitted disposal facility in Carlsbad, New Mexico.

DEFFERAL REQUEST

A total of 30 cubic yards of impacted soil was excavated from the Site via hand shoveling to a maximum depth of 0.5 feet bgs before encountering refusal. Impacted soil was left in place in the floor of the excavation, due to the release area being surrounded by active production equipment where it could not be accessed with mechanical equipment and remediation would require a major facility deconstruction. The impacted soil remaining in place is delineated vertically by delineation soil samples BH02/BH02A and laterally by delineation soil samples from borehole BH01 and potholes PH01 through PH03. A maximum of 30 cubic yards of hydrocarbon impacted soil remains in place assuming a maximum 1-foot depth based on the delineation soil samples listed above, that were compliant with the Closure Criteria. The deferral area and delineation soil samples are depicted on Figure 4.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the Site. Based on the presence of active production equipment within and around the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2206853301,

NAPP2208351954, and NAPP2209137379 until final reclamation of the well pad or major construction, whichever comes first.

If you have any questions or comments, please contact Ms. Aimee Cole at (720) 384-7365 or acole@ensolum.com.

Sincerely,
Ensolum, LLC

Tacoma Morrissey
Senior Geologist

Aimee Cole
Senior Managing Scientist

cc: Adrian Baker, XTO
Bureau of Land Management

Appendices:

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

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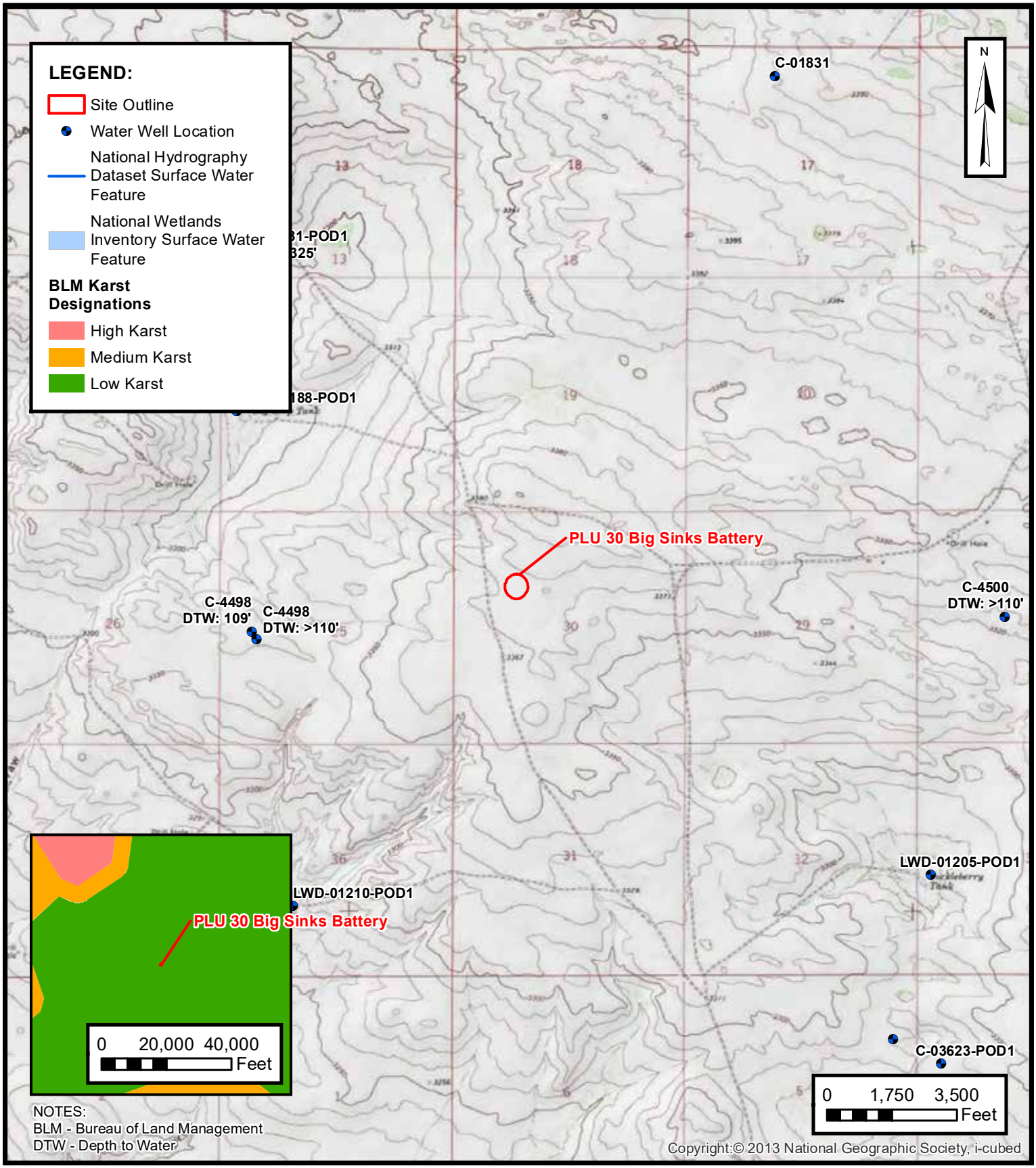
FIGURES



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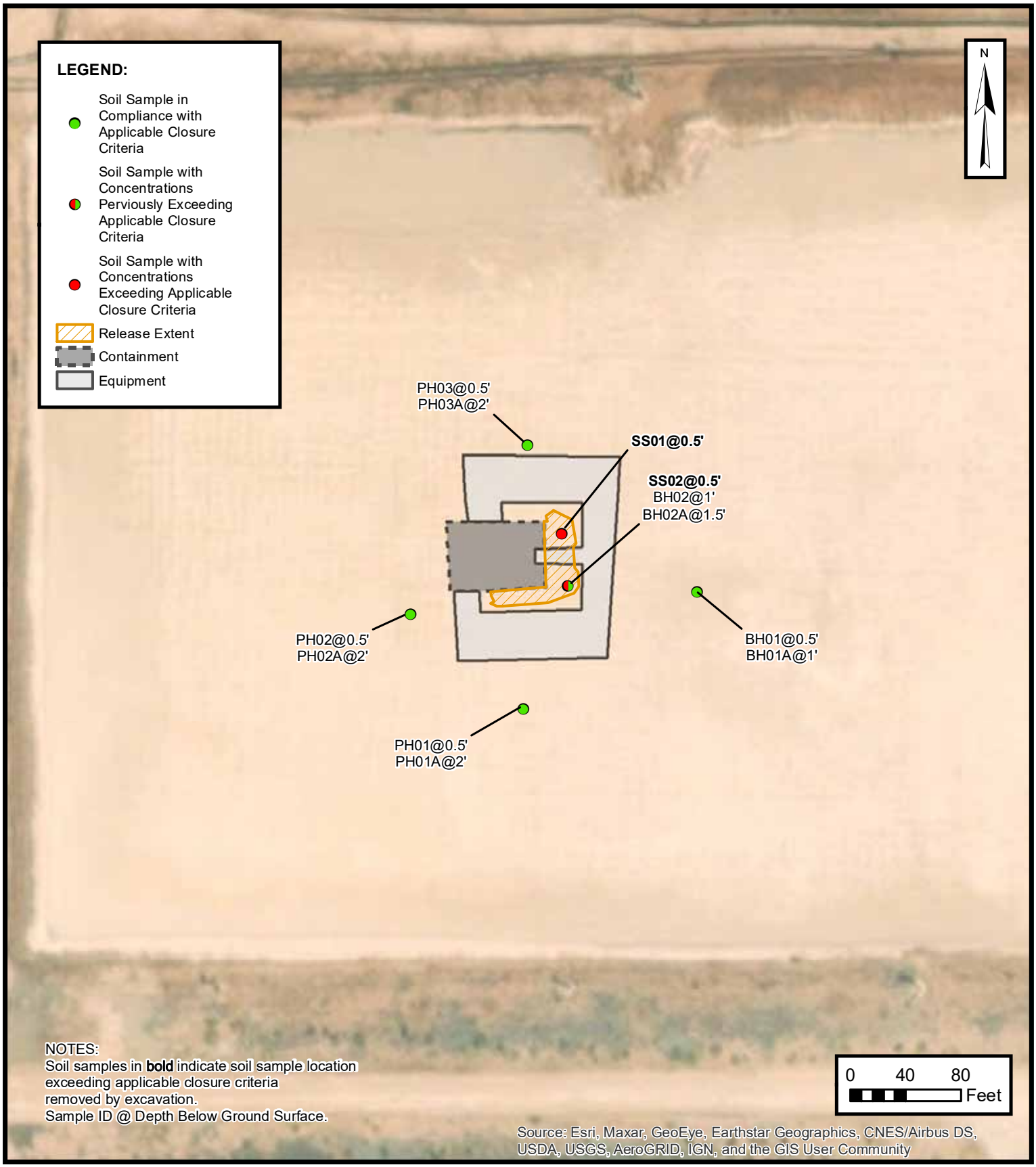
SITE RECEPTOR MAP

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE
1



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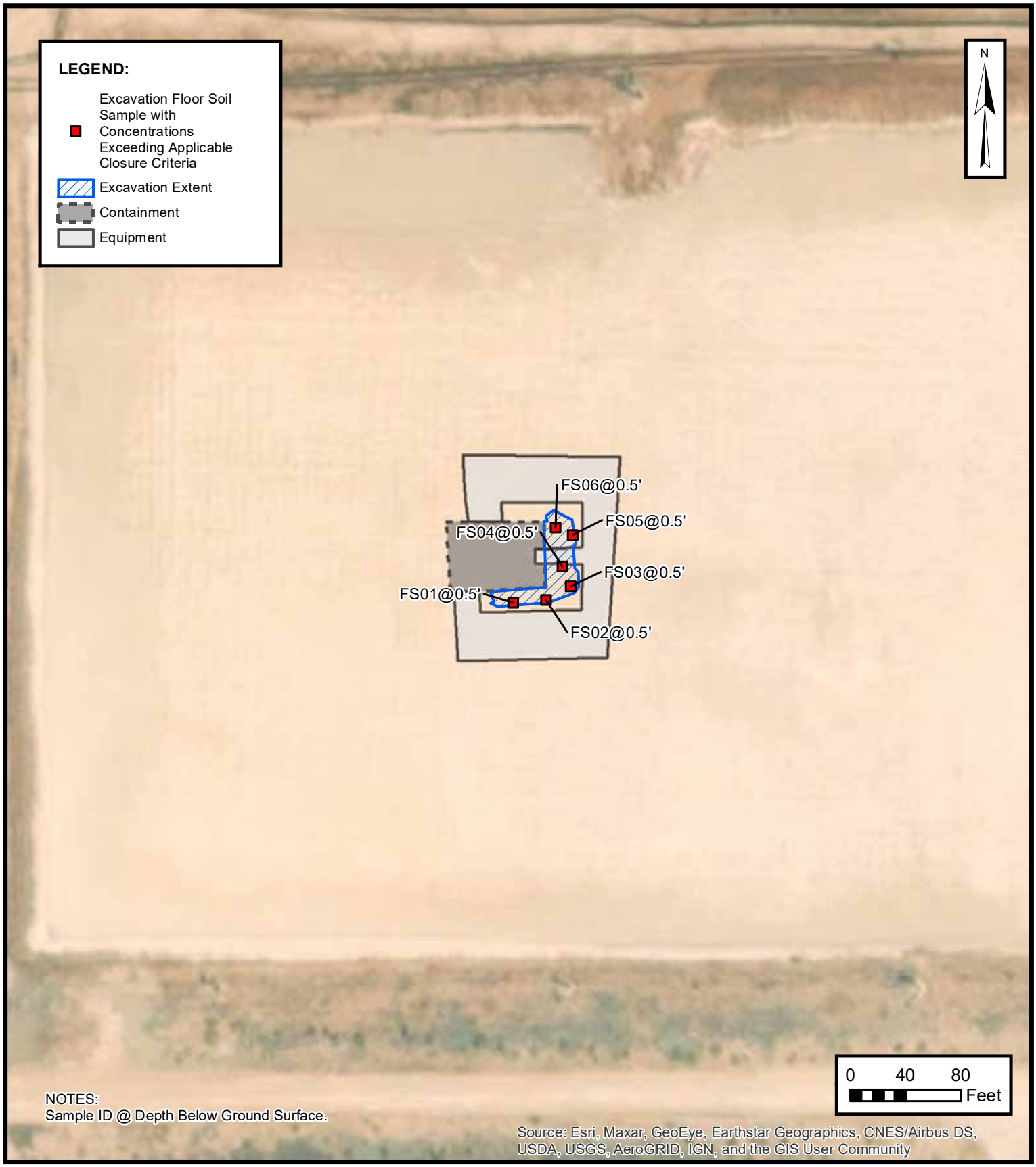
SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE
2



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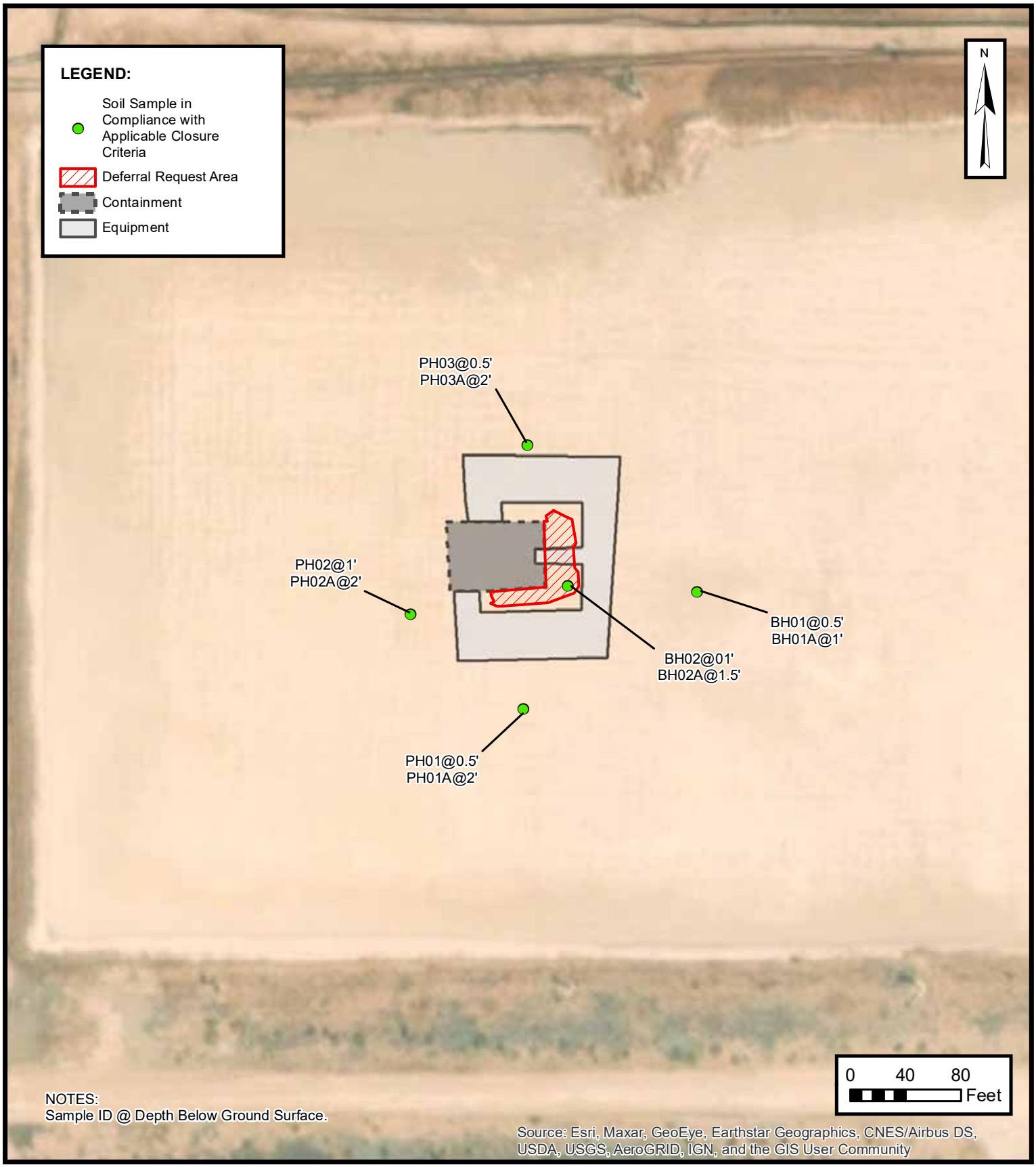
EXCAVATION SOIL SAMPLE LOCATIONS

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE
3



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DEFERRAL MAP

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE
4

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 30 Big Sinks Battery
XTO Energy, Inc.
Eddy 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 Soil Samples										
SS01	04/15/2022	0.5	<0.0398	**158**	4,620	11,200	<250	**15,800**	**15,800**	103
SS02	04/15/2022	0.5	<0.0402	**157**	2,060	7,820	<49.9	**9,880**	**9,880**	448
Delineation Soil Samples										
BH01	05/02/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
BH01A	05/02/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	14.6
BH02	05/02/2022	1	<0.00200	<0.00399	<49.9	428	60.9	428	489	26.2
BH02A	05/02/2022	1.5	<0.00199	<0.00398	<50.0	110	<50.0	110	110	15.4
PH01	05/02/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	85.9
PH01A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	17.0
PH02	05/02/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	76.4
PH02A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	52.1
PH03	05/02/2022	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	36.9
PH03A	05/02/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	36.3
Confirmation Soil Samples										
FS01	05/03/2022	0.5	<0.00201	0.299	1,290	10,400	1,640	**11,700**	**13,300**	394
FS02	05/03/2022	0.5	<0.00200	0.844	1,180	7,810	1,380	**8,990**	**10,400**	141
FS03	05/03/2022	0.5	<0.00199	45.1	2,140	11,500	1,880	**13,600**	**15,500**	723
FS04	05/03/2022	0.5	<0.00200	1.09	2,220	14,200	2,330	**16,400**	**18,800**	790
FS05	05/03/2022	0.5	0.00362	1.35	496	12,400	<250	**12,900**	**12,900**	528
FS06	05/03/2022	0.5	<0.400	0.177	617	16,000	<250	**16,600**	**16,600**	106

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

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APPENDIX A

Referenced Well Records

New Mexico Office of the State Engineer
Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04498 POD1	2	1	3	25	25S	30E	609394	3552168

Driller License: 1249 **Driller Company:** ATKINS ENGINEERING ASSOC. INC.

Driller Name: JAKCIE D ATKINS

Drill Start Date: 02/24/2021 **Drill Finish Date:** 02/24/2021 **Plug Date:** 03/02/2021

Log File Date: 03/11/2021 **PCW Rcv Date:** **Source:**

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 0 GPM

Casing Size: **Depth Well:** 109 feet **Depth Water:**

New Mexico Office of the State Engineer
Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04500 POD1	4	4	1	28	25S	31E	614620	3552380

Driller License: 1249 **Driller Company:** ATKINS ENGINEERING ASSOC. INC.

Driller Name: ATKINS, JACKIE D.UELENER

Drill Start Date: 03/24/2021 **Drill Finish Date:** 03/24/2021 **Plug Date:** 04/27/2021

Log File Date: 05/05/2021 **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** **Depth Water:**

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 320643103465002

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

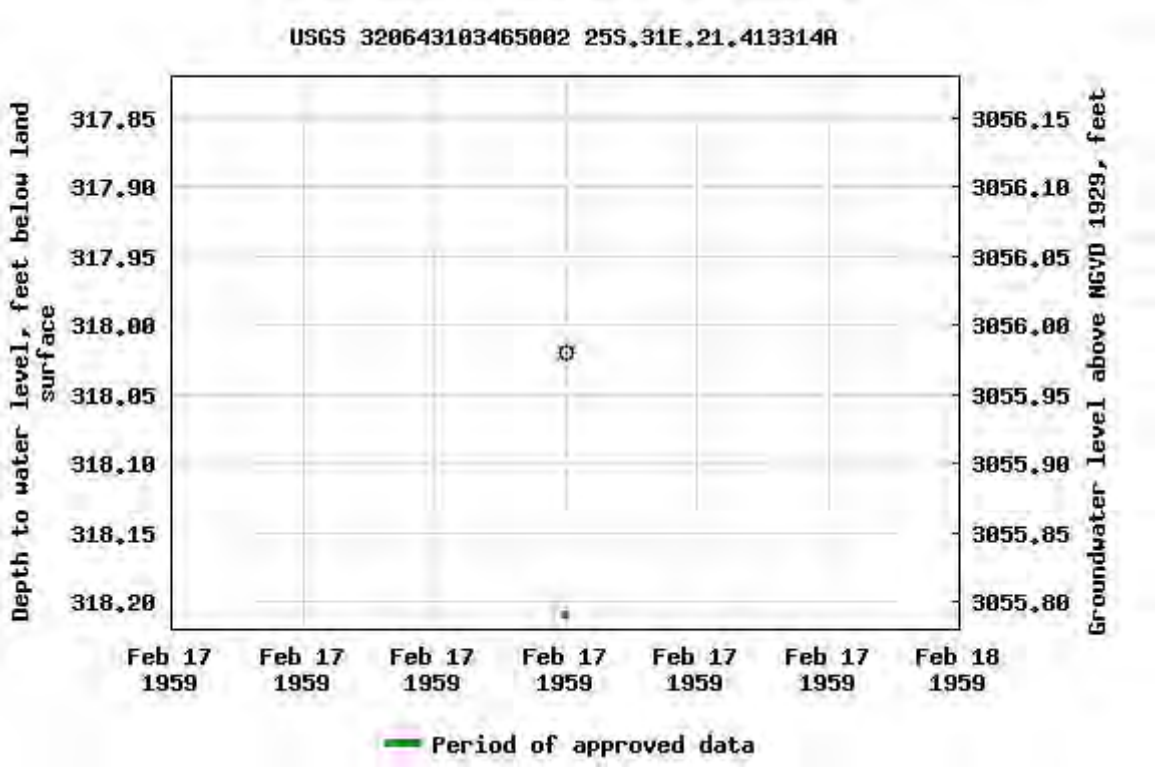
USGS 320643103465002 25S.31E.21.413314A

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°06'46.0", Longitude 103°46'56.3" NAD83
Land-surface elevation 3,374.00 feet above NGVD29
The depth of the well is 400 feet below land surface.
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) 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



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2022-05-17 14:23:51 EDT
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APPENDIX B

Photographic Log

Photo Log

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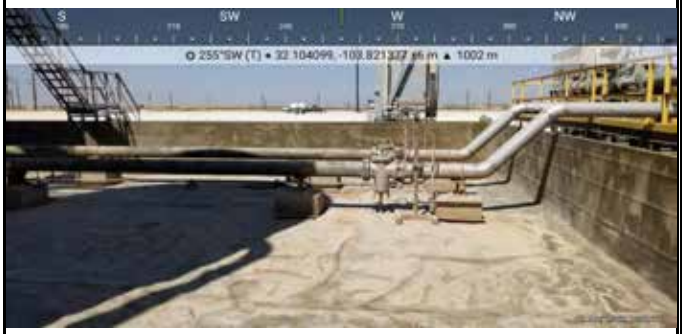
Photographic Log
XTO Energy, Inc.
PLU 30 Big Sinks Battery
Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379

Photograph 1 Date: Apr 15, 2022
Description: View of release extent and visible staining facing north.

Photograph 2 Date: Apr 15, 2022
Description: View of release extent and visible staining facing south.

Photograph 3 Date: May 2, 2022
Description: View of containment during liner inspection, facing south.



Photograph 4 Date: May 2, 2022
Description: View of containment during liner inspection, facing west.

Photo Log

ENSOLUM

Photographic Log
XTO Energy, Inc.
PLU 30 Big Sinks Battery
Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379

Photograph 5 Date: 4/15/2022
Description: View of hand shoveled excavation extent facing north.

Photograph 6 Date: 4/15/2022
Description: View of hand shoveled excavation extent facing south.

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APPENDIX C

Lithologic Soil Sampling Logs

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	Sample Name: BH01	Date: 05/02/2022
	Site Name: PLU 30 Big Sinks Battery	
	Incident Number: NAPP2206853301, NAPP2208351954, NAPP2209137379	
	Job Number: 03E1558016	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: hand auger
Coordinates: 32.103973°, -103.821072°	Hole Diameter: 4"	Total Depth: 1'

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. A 40% correction factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<168	3.2	N	BH01	0.5	0.5	CCHE	caliche
D	<168	0.0	N	BH01A	1	1	CCHE	caliche
								TD @ 1 foot auger refusal

ENSOLUM

	Sample Name: BH02	Date: 05/02/2022
	Site Name: PLU 30 Big Sinks Battery	
	Incident Number: NAPP2206853301, NAPP2208351954, NAPP2209137379	
	Job Number: 03E1558016	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: hand auger
Coordinates: 32.103984°, -103.821327°	Hole Diameter: 4"	Total Depth: 1'

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. A 40% correction factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	212.8	3,863	Y	SS02	0.5	0.5	CCHE	caliche
D	<168	101.2	Y	BH02	1	1	CCHE	caliche
D	<168	40.2	N	BH02	1.5	1.5	CCHE	caliche
								TD @ 1.5 foot bgs, auger refusal

ENSOLUM

Sample Name: PH01	Date: 05/02/2022
Site Name: PLU 30 Big Sinks Battery	
Incident Number: NAPP2206853301, NAPP2208351954, NAPP2209137379	
Job Number: 03E1558016	

LITHOLOGIC / SOIL SAMPLING LOG

	Logged By: CS	Method: back hoe
Coordinates: 32.103777°, -103.821415°	Hole Diameter: 2'	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. A 40% correction factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	<168	4.9	N	PH01	0.5	0.5	CCHE	caliche
						1		
D	<168	1.0	N	PH01A	2	2	CCHE	caliche
								TD @ 2 feet

ENSOLUM

Sample Name: PH02	Date: 05/02/2022
Site Name: PLU 30 Big Sinks Battery	
Incident Number: NAPP2206853301, NAPP2208351954, NAPP2209137379	
Job Number: 03E1558016	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: CS	Method: back hoe
Coordinates: 32.103935°, -103.821637°	Hole Diameter: 2'
	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. A 40% correction factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	168	2.5	N			0.5	CCHE	caliche
D	<168	6.8	N	PH02	1	1	CCHE	caliche
D	<168	1.1	N	PH02A	2	2	CCHE	caliche

TD @ 2 feet

ENSOLUM

	Sample Name: PH03	Date: 05/02/2022
	Site Name: PLU 30 Big Sinks Battery	
	Incident Number: NAPP2206853301, NAPP2208351954, NAPP2209137379	
	Job Number: 03E1558016	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: back hoe
Coordinates: 32.104218°, -103.821406°	Hole Diameter: 2'	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. A 40% correction factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	168	3.6	N	PH03	0.5	0.5	CCHE	caliche
D	<168	2.1	N	PH03	2	2	CCHE	caliche
								TD @ 2 feet

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: 890-2195-1
Laboratory SDG: 03E1558019 03E1558020 03E1558022
Client Project/Site: PLU 30 BS

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

Attn: Tacoma Morrissey

JKramer

Authorized for release by:
4/22/2022 12:43:15 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: PLU 30 BS

Laboratory Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Table of Contents

Eurofins Carlsbad
4/22/2022

Definitions/Glossary

Client: Ensolum Job ID: 890-2195-1
Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Job ID: 890-2195-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2195-1

Receipt
The samples were received on 4/15/2022 3:41 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23784 and analytical batch 880-23768 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23898 and analytical batch 880-23883 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS01 (890-2195-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: SS02 (890-2195-2). Evidence of matrix interferences is not obvious.

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-23782 and analytical batch 880-23971 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Client Sample ID: SS01

Date Collected: 04/15/22 11:00
Date Received: 04/15/22 15:41
Sample Depth: 0.5

Lab Sample ID: 890-2195-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0398	U F1	0.0398		mg/Kg		04/19/22 13:14	04/20/22 01:04	20
Toluene	**4.47**	**F1**	0.0398		mg/Kg		04/19/22 13:14	04/20/22 01:04	20
Ethylbenzene	**2.36**	**F1**	0.0398		mg/Kg		04/19/22 13:14	04/20/22 01:04	20
m-Xylene & p-Xylene	**149**		1.98		mg/Kg		04/21/22 09:32	04/21/22 14:46	500
o-Xylene	**1.87**	**F1**	0.0398		mg/Kg		04/19/22 13:14	04/20/22 01:04	20
Xylenes, Total	**183**		1.98		mg/Kg		04/21/22 09:32	04/21/22 14:46	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*70 - 130*	*04/19/22 13:14*	*04/20/22 01:04*	*20*
1,4-Difluorobenzene (Surr)	*26*	*S1-*	*70 - 130*	*04/19/22 13:14*	*04/20/22 01:04*	*20*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**158**		1.98		mg/Kg			04/20/22 11:37	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**15800**		250		mg/Kg			04/20/22 15:20	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	**4620**		250		mg/Kg		04/19/22 10:31	04/20/22 07:29	5
Diesel Range Organics (Over C10-C28)	**11200**		250		mg/Kg		04/19/22 10:31	04/20/22 07:29	5
Oil Range Organics (Over C28-C36)	<250	U	250		mg/Kg		04/19/22 10:31	04/20/22 07:29	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*231*	*S1+*	*70 - 130*	*04/19/22 10:31*	*04/20/22 07:29*	*5*
o-Terphenyl	*96*		*70 - 130*	*04/19/22 10:31*	*04/20/22 07:29*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**103**		5.00		mg/Kg			04/22/22 01:41	1

Client Sample ID: SS02

Date Collected: 04/15/22 11:05
Date Received: 04/15/22 15:41
Sample Depth: 0.5

Lab Sample ID: 890-2195-2

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0402	U	0.0402		mg/Kg		04/19/22 13:14	04/20/22 01:24	20
Toluene	**3.39**		0.0402		mg/Kg		04/19/22 13:14	04/20/22 01:24	20
Ethylbenzene	**3.17**		0.0402		mg/Kg		04/19/22 13:14	04/20/22 01:24	20
m-Xylene & p-Xylene	**124**		1.98		mg/Kg		04/21/22 09:32	04/21/22 15:07	500
o-Xylene	**26.9**		0.199		mg/Kg		04/20/22 10:15	04/20/22 19:14	100
Xylenes, Total	**151**		1.98		mg/Kg		04/21/22 09:32	04/21/22 15:07	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*04/19/22 13:14*	*04/20/22 01:24*	*20*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Client Sample ID: SS02
Date Collected: 04/15/22 11:05
Date Received: 04/15/22 15:41
Sample Depth: 0.5

Lab Sample ID: 890-2195-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*2*	*S1-*	*70 - 130*	*04/19/22 13:14*	*04/20/22 01:24*	*20*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**157**		1.98	mg/Kg			04/20/22 11:37	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**9880**		49.9	mg/Kg			04/20/22 15:20	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	**2060**		49.9	mg/Kg		04/19/22 10:31	04/20/22 03:40	1
Diesel Range Organics (Over C10-C28)	**7820**		49.9	mg/Kg		04/19/22 10:31	04/20/22 03:40	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		04/19/22 10:31	04/20/22 03:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*04/19/22 10:31*	*04/20/22 03:40*	*1*
o-Terphenyl	*141*	*S1+*	*70 - 130*	*04/19/22 10:31*	*04/20/22 03:40*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**448**		5.00	mg/Kg			04/22/22 02:06	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-13843-A-3-F MS	Matrix Spike	100	107
880-13843-A-3-G MSD	Matrix Spike Duplicate	94	104
880-13935-A-1-G MS	Matrix Spike	99	85
880-13935-A-1-H MSD	Matrix Spike Duplicate	103	99
890-2195-1	SS01	76	26 S1-
890-2195-1 MS	SS01	24 S1-	11 S1-
890-2195-1 MSD	SS01	25 S1-	2 S1-
890-2195-2	SS02	94	2 S1-
LCS 880-23784/1-A	Lab Control Sample	95	103
LCS 880-23824/1-A	Lab Control Sample	102	108
LCS 880-23898/1-A	Lab Control Sample	100	101
LCSD 880-23784/2-A	Lab Control Sample Dup	94	103
LCSD 880-23824/2-A	Lab Control Sample Dup	97	106
LCSD 880-23898/2-A	Lab Control Sample Dup	100	101
MB 880-23779/5-A	Method Blank	97	102
MB 880-23784/5-A	Method Blank	96	102
MB 880-23824/5-A	Method Blank	96	103
MB 880-23898/5-A	Method Blank	101	97

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-13850-A-21-B MS	Matrix Spike	82	90
880-13850-A-21-C MSD	Matrix Spike Duplicate	77	81
890-2195-1	SS01	231 S1+	96
890-2195-2	SS02	147 S1+	141 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO2	OTPH2
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
LCS 880-23780/2-A	Lab Control Sample	92	108
LCSD 880-23780/3-A	Lab Control Sample Dup	100	116
MB 880-23780/1-A	Method Blank	98	120

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-23779/5-A
Matrix: Solid
Analysis Batch: 23768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23779

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/22 10:22	04/19/22 12:24	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/22 10:22	04/19/22 12:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/22 10:22	04/19/22 12:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/19/22 10:22	04/19/22 12:24	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/22 10:22	04/19/22 12:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/19/22 10:22	04/19/22 12:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*04/19/22 10:22*	*04/19/22 12:24*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*04/19/22 10:22*	*04/19/22 12:24*	*1*

Lab Sample ID: MB 880-23784/5-A
Matrix: Solid
Analysis Batch: 23768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23784

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/22 13:14	04/20/22 00:35	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/22 13:14	04/20/22 00:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/22 13:14	04/20/22 00:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/19/22 13:14	04/20/22 00:35	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/22 13:14	04/20/22 00:35	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/19/22 13:14	04/20/22 00:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*04/19/22 13:14*	*04/20/22 00:35*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*04/19/22 13:14*	*04/20/22 00:35*	*1*

Lab Sample ID: LCS 880-23784/1-A
Matrix: Solid
Analysis Batch: 23768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23784

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1185		mg/Kg		118	70 - 130		
Toluene			0.100	0.1239		mg/Kg		124	70 - 130		
Ethylbenzene			0.100	0.1119		mg/Kg		112	70 - 130		
m-Xylene & p-Xylene			0.200	0.2319		mg/Kg		116	70 - 130		
o-Xylene			0.100	0.1098		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-23784/2-A
Matrix: Solid
Analysis Batch: 23768

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23784

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1199		mg/Kg		120	70 - 130	1	35

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: LCSD 880-23784/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 23768 — **Prep Batch: 23784**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1189		mg/Kg		119	70 - 130	4	35
Ethylbenzene			0.100	0.1069		mg/Kg		107	70 - 130	5	35
m-Xylene & p-Xylene			0.200	0.2204		mg/Kg		110	70 - 130	5	35
o-Xylene			0.100	0.1044		mg/Kg		104	70 - 130	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 890-2195-1 MS — **Client Sample ID: SS01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 23768 — **Prep Batch: 23784**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.0398	U F1	0.100	<0.0401	U F1	mg/Kg		0	70 - 130
Toluene	4.47	F1	0.100	2.004	F1	mg/Kg		1777	70 - 130
Ethylbenzene	2.36	F1	0.100	1.189	F1	mg/Kg		1069	70 - 130
m-Xylene & p-Xylene	23.3	E	0.200	10.24	4	mg/Kg		4527	70 - 130
o-Xylene	1.87	F1	0.100	0.6170	F1	mg/Kg		522	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*24*	*S1-*	*70 - 130*
1,4-Difluorobenzene (Surr)	*11*	*S1-*	*70 - 130*

Lab Sample ID: 890-2195-1 MSD — **Client Sample ID: SS01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 23768 — **Prep Batch: 23784**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.0398	U F1	0.0998	<0.0399	U F1	mg/Kg		0	70 - 130	NC	35
Toluene	4.47	F1	0.0998	2.017	F1	mg/Kg		1797	70 - 130	1	35
Ethylbenzene	2.36	F1	0.0998	1.198	F1	mg/Kg		1082	70 - 130	1	35
m-Xylene & p-Xylene	23.3	E	0.200	10.10	4	mg/Kg		4476	70 - 130	1	35
o-Xylene	1.87	F1	0.0998	0.6504	F1	mg/Kg		558	70 - 130	5	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*25*	*S1-*	*70 - 130*
1,4-Difluorobenzene (Surr)	*2*	*S1-*	*70 - 130*

Lab Sample ID: MB 880-23824/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 23822 — **Prep Batch: 23824**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/20/22 10:15	04/20/22 13:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/20/22 10:15	04/20/22 13:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/20/22 10:15	04/20/22 13:02	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/20/22 10:15	04/20/22 13:02	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: MB 880-23824/5-A
Matrix: Solid
Analysis Batch: 23822

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23824

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/20/22 10:15	04/20/22 13:02	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/20/22 10:15	04/20/22 13:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*04/20/22 10:15*	*04/20/22 13:02*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*04/20/22 10:15*	*04/20/22 13:02*	*1*

Lab Sample ID: LCS 880-23824/1-A
Matrix: Solid
Analysis Batch: 23822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1042		mg/Kg		104	70 - 130
Toluene	0.100	0.1178		mg/Kg		118	70 - 130
Ethylbenzene	0.100	0.1206		mg/Kg		121	70 - 130
m-Xylene & p-Xylene	0.200	0.2411		mg/Kg		121	70 - 130
o-Xylene	0.100	0.1174		mg/Kg		117	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 880-23824/2-A
Matrix: Solid
Analysis Batch: 23822

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23824

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1277		mg/Kg		128	70 - 130	20	35
Toluene	0.100	0.1308	*+	mg/Kg		131	70 - 130	10	35
Ethylbenzene	0.100	0.1194		mg/Kg		119	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2455		mg/Kg		123	70 - 130	2	35
o-Xylene	0.100	0.1150		mg/Kg		115	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 880-13843-A-3-F MS
Matrix: Solid
Analysis Batch: 23822

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 23824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0457	F1	0.0998	0.1336		mg/Kg		88	70 - 130
Toluene	0.214	*+ F1 F2	0.0998	0.1427	F1	mg/Kg		-72	70 - 130
Ethylbenzene	0.0551		0.0998	0.1311		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	0.151	F1	0.200	0.2704	F1	mg/Kg		60	70 - 130
o-Xylene	0.0492		0.0998	0.1263		mg/Kg		77	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: 880-13843-A-3-F MS
Matrix: Solid
Analysis Batch: 23822

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 23824

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 880-13843-A-3-G MSD
Matrix: Solid
Analysis Batch: 23822

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 23824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.0457	F1	0.0996	0.1898	F1	mg/Kg		145	70 - 130	35	35
Toluene	0.214	*+ F1 F2	0.0996	0.3655	F1 F2	mg/Kg		152	70 - 130	88	35
Ethylbenzene	0.0551		0.0996	0.1663		mg/Kg		112	70 - 130	24	35
m-Xylene & p-Xylene	0.151	F1	0.199	0.3680		mg/Kg		109	70 - 130	31	35
o-Xylene	0.0492		0.0996	0.1563		mg/Kg		108	70 - 130	21	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: MB 880-23898/5-A
Matrix: Solid
Analysis Batch: 23883

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23898

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/21/22 09:32	04/21/22 11:41	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/21/22 09:32	04/21/22 11:41	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/21/22 09:32	04/21/22 11:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/21/22 09:32	04/21/22 11:41	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/21/22 09:32	04/21/22 11:41	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/21/22 09:32	04/21/22 11:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	04/21/22 09:32	04/21/22 11:41	1
1,4-Difluorobenzene (Surr)	97		70 - 130	04/21/22 09:32	04/21/22 11:41	1

Lab Sample ID: LCS 880-23898/1-A
Matrix: Solid
Analysis Batch: 23883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23898

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1186		mg/Kg		119	70 - 130		
Toluene			0.100	0.1257		mg/Kg		126	70 - 130		
Ethylbenzene			0.100	0.1111		mg/Kg		111	70 - 130		
m-Xylene & p-Xylene			0.200	0.2368		mg/Kg		118	70 - 130		
o-Xylene			0.100	0.1103		mg/Kg		110	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: LCS 880-23898/1-A
Matrix: Solid
Analysis Batch: 23883

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23898

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

Lab Sample ID: LCSD 880-23898/2-A
Matrix: Solid
Analysis Batch: 23883

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23898

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1153		mg/Kg		115	70 - 130	3	35
Toluene	0.100	0.1219		mg/Kg		122	70 - 130	3	35
Ethylbenzene	0.100	0.1082		mg/Kg		108	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.2279		mg/Kg		114	70 - 130	4	35
o-Xylene	0.100	0.1087		mg/Kg		109	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-13935-A-1-G MS
Matrix: Solid
Analysis Batch: 23883

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 23898

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.100	0.01409	F1	mg/Kg		14	70 - 130
Toluene	<0.00200	U F1	0.100	0.01879	F1	mg/Kg		19	70 - 130
Ethylbenzene	<0.00200	U F1	0.100	0.01667	F1	mg/Kg		17	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.03234	F1	mg/Kg		16	70 - 130
o-Xylene	<0.00200	U F1	0.100	0.01595	F1	mg/Kg		16	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*

Lab Sample ID: 880-13935-A-1-H MSD
Matrix: Solid
Analysis Batch: 23883

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 23898

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.100	0.02589	F1 F2	mg/Kg		26	70 - 130	59	35
Toluene	<0.00200	U F1	0.100	0.02168	F1	mg/Kg		22	70 - 130	14	35
Ethylbenzene	<0.00200	U F1	0.100	0.01789	F1	mg/Kg		18	70 - 130	7	35
m-Xylene & p-Xylene	<0.00399	U F1	0.201	0.03600	F1	mg/Kg		18	70 - 130	11	35
o-Xylene	<0.00200	U F1	0.100	0.01774	F1	mg/Kg		18	70 - 130	11	35

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: MB 880-23780/1-A
Matrix: Solid
Analysis Batch: 23761

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 23780

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		04/19/22 10:31	04/19/22 19:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/19/22 10:31	04/19/22 19:58	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/19/22 10:31	04/19/22 19:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*04/19/22 10:31*	*04/19/22 19:58*	*1*
o-Terphenyl	*120*		*70 - 130*	*04/19/22 10:31*	*04/19/22 19:58*	*1*

Lab Sample ID: LCS 880-23780/2-A
Matrix: Solid
Analysis Batch: 23761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 23780

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1036		mg/Kg		104	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	835.6		mg/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*92*		*70 - 130*
o-Terphenyl	*108*		*70 - 130*

Lab Sample ID: LCSD 880-23780/3-A
Matrix: Solid
Analysis Batch: 23761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 23780

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1010		mg/Kg		101	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	840.2		mg/Kg		84	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*100*		*70 - 130*
o-Terphenyl	*116*		*70 - 130*

Lab Sample ID: 880-13850-A-21-B MS
Matrix: Solid
Analysis Batch: 23761

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 23780

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	1000	866.7		mg/Kg		84	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	812.9		mg/Kg		79	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: 880-13850-A-21-B MS
Matrix: Solid
Analysis Batch: 23761

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 23780

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	90		70 - 130

Lab Sample ID: 880-13850-A-21-C MSD
Matrix: Solid
Analysis Batch: 23761

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 23780

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	802.0		mg/Kg		78	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	745.7		mg/Kg		73	70 - 130	9	20

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-23782/1-A
Matrix: Solid
Analysis Batch: 23971

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			04/21/22 23:59	1

Lab Sample ID: LCS 880-23782/2-A
Matrix: Solid
Analysis Batch: 23971

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	233.1		mg/Kg		93	90 - 110		

Lab Sample ID: LCSD 880-23782/3-A
Matrix: Solid
Analysis Batch: 23971

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	247.0		mg/Kg		99	90 - 110	6	20

Lab Sample ID: 880-13850-A-21-E MS
Matrix: Solid
Analysis Batch: 23971

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	476	F1	252	759.6	F1	mg/Kg		113	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-13850-A-21-F MSD
Matrix: Solid
Analysis Batch: 23971

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	476	F1	252	714.8		mg/Kg		95	90 - 110	6	20

Lab Sample ID: 890-2196-A-1-D MS
Matrix: Solid
Analysis Batch: 23971

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	7110	F1	2480	10210	F1	mg/Kg		125	90 - 110

Lab Sample ID: 890-2196-A-1-D MSD
Matrix: Solid
Analysis Batch: 23971

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	7110	F1	2480	9834		mg/Kg		110	90 - 110	4	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

GC VOA

Analysis Batch: 23768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8021B	23784
890-2195-2	SS02	Total/NA	Solid	8021B	23784
MB 880-23779/5-A	Method Blank	Total/NA	Solid	8021B	23779
MB 880-23784/5-A	Method Blank	Total/NA	Solid	8021B	23784
LCS 880-23784/1-A	Lab Control Sample	Total/NA	Solid	8021B	23784
LCSD 880-23784/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23784
890-2195-1 MS	SS01	Total/NA	Solid	8021B	23784
890-2195-1 MSD	SS01	Total/NA	Solid	8021B	23784

Prep Batch: 23779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-23779/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 23784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	5035	
890-2195-2	SS02	Total/NA	Solid	5035	
MB 880-23784/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23784/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23784/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2195-1 MS	SS01	Total/NA	Solid	5035	
890-2195-1 MSD	SS01	Total/NA	Solid	5035	

Analysis Batch: 23822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-2	SS02	Total/NA	Solid	8021B	23824
MB 880-23824/5-A	Method Blank	Total/NA	Solid	8021B	23824
LCS 880-23824/1-A	Lab Control Sample	Total/NA	Solid	8021B	23824
LCSD 880-23824/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23824
880-13843-A-3-F MS	Matrix Spike	Total/NA	Solid	8021B	23824
880-13843-A-3-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23824

Prep Batch: 23824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-2	SS02	Total/NA	Solid	5035	
MB 880-23824/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23824/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23824/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13843-A-3-F MS	Matrix Spike	Total/NA	Solid	5035	
880-13843-A-3-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 23834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	Total BTEX	
890-2195-2	SS02	Total/NA	Solid	Total BTEX	

Analysis Batch: 23883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8021B	23898
890-2195-2	SS02	Total/NA	Solid	8021B	23898
MB 880-23898/5-A	Method Blank	Total/NA	Solid	8021B	23898

QC Association Summary

Client: Ensolum Job ID: 890-2195-1
Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

GC VOA (Continued)

Analysis Batch: 23883 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-23898/1-A	Lab Control Sample	Total/NA	Solid	8021B	23898
LCSD 880-23898/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23898
880-13935-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	23898
880-13935-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23898

Prep Batch: 23898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	5035	
890-2195-2	SS02	Total/NA	Solid	5035	
MB 880-23898/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23898/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23898/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13935-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
880-13935-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

GC Semi VOA

Analysis Batch: 23761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8015B NM	23780
890-2195-2	SS02	Total/NA	Solid	8015B NM	23780
MB 880-23780/1-A	Method Blank	Total/NA	Solid	8015B NM	23780
LCS 880-23780/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	23780
LCSD 880-23780/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	23780
880-13850-A-21-B MS	Matrix Spike	Total/NA	Solid	8015B NM	23780
880-13850-A-21-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	23780

Prep Batch: 23780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8015NM Prep	
890-2195-2	SS02	Total/NA	Solid	8015NM Prep	
MB 880-23780/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-23780/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-23780/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-13850-A-21-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-13850-A-21-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 23854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8015 NM	
890-2195-2	SS02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 23782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Soluble	Solid	DI Leach	
890-2195-2	SS02	Soluble	Solid	DI Leach	
MB 880-23782/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-23782/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-23782/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-13850-A-21-E MS	Matrix Spike	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

HPLC/IC (Continued)

Leach Batch: 23782 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13850-A-21-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2196-A-1-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2196-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 23971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Soluble	Solid	300.0	23782
890-2195-2	SS02	Soluble	Solid	300.0	23782
MB 880-23782/1-A	Method Blank	Soluble	Solid	300.0	23782
LCS 880-23782/2-A	Lab Control Sample	Soluble	Solid	300.0	23782
LCSD 880-23782/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	23782
880-13850-A-21-E MS	Matrix Spike	Soluble	Solid	300.0	23782
880-13850-A-21-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23782
890-2196-A-1-D MS	Matrix Spike	Soluble	Solid	300.0	23782
890-2196-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23782

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Client Sample ID: SS01

Date Collected: 04/15/22 11:00
Date Received: 04/15/22 15:41

Lab Sample ID: 890-2195-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	23784	04/19/22 13:14	MR	XEN MID
Total/NA	Analysis	8021B		20			23768	04/20/22 01:04	MR	XEN MID
Total/NA	Prep	5035			5.04 g	5 mL	23898	04/21/22 09:32	MR	XEN MID
Total/NA	Analysis	8021B		500			23883	04/21/22 14:46	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23834	04/20/22 11:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23854	04/20/22 15:20	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23780	04/19/22 10:31	DM	XEN MID
Total/NA	Analysis	8015B NM		5			23761	04/20/22 07:29	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	23782	04/19/22 11:57	CH	XEN MID
Soluble	Analysis	300.0		1			23971	04/22/22 01:41	CH	XEN MID

Client Sample ID: SS02

Date Collected: 04/15/22 11:05
Date Received: 04/15/22 15:41

Lab Sample ID: 890-2195-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	23784	04/19/22 13:14	MR	XEN MID
Total/NA	Analysis	8021B		20			23768	04/20/22 01:24	MR	XEN MID
Total/NA	Prep	5035			5.03 g	5 mL	23824	04/20/22 10:15	MR	XEN MID
Total/NA	Analysis	8021B		100			23822	04/20/22 19:14	AJ	XEN MID
Total/NA	Prep	5035			5.05 g	5 mL	23898	04/21/22 09:32	MR	XEN MID
Total/NA	Analysis	8021B		500			23883	04/21/22 15:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23834	04/20/22 11:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23854	04/20/22 15:20	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	23780	04/19/22 10:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23761	04/20/22 03:40	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	23782	04/19/22 11:57	CH	XEN MID
Soluble	Analysis	300.0		1			23971	04/22/22 02:06	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum Job ID: 890-2195-1
Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

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 Job ID: 890-2195-1
Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

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: PLU 30 BS

Job ID: 890-2195-1
SDG: 03E1558019 03E1558020 03E1558022

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2195-1	SS01	Solid	04/15/22 11:00	04/15/22 15:41	0.5
890-2195-2	SS02	Solid	04/15/22 11:05	04/15/22 15:41	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: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Adrian Baker
Company Name:	Ensolum LLC	Company Name:	XTO Energy, Inc.
Address:		Address:	3104 E. Green Street
City, State ZIP:		City, State ZIP:	Carlsbad, NM 88220
Phone:	337.257.8307	Email:	bbeill@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:	PLU 30 BS	Turn Around	
Project Number:	03E1558016, 03E1558020, 03E1558022	☑ Routine ☐ Rush	
Project Location:	API: 30-015-46934	Due Date:	
Sampler's Name:	Conner Shore	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	CC: 2037891001		

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	IR-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.4
Total Containers:		Corrected Temperature:	3.2

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

890-2195 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Sample Comments
SS01	s	4/15/2022	1100	0.5'	g	1		x	x	x	
SS02	s	4/15/2022	1105	0.5'	g	1		x	x	x	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_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		4.15.22 1541	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2195-1
SDG Number: 03E1558019 03E1558020 03E1558022

Login Number: 2195
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: 890-2195-1
SDG Number: 03E1558019 03E1558020 03E1558022

Login Number: 2195
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 04/19/22 11:38 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: 890-2267-1
Laboratory Sample Delivery Group: 03E1558016
Client Project/Site: PLU 30 Big Sinks CTB

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
5/13/2022 9:43:20 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: PLU 30 Big Sinks CTB

Laboratory Job ID: 890-2267-1
SDG: 03E1558016

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-2267-1
Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*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: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Job ID: 890-2267-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2267-1

Receipt
The samples were received on 5/3/2022 8:13 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 2.0°C

Receipt Exceptions
One or more containers for the following samples were received broken or leaking: PH01 (890-2267-1), PH01A (890-2267-2), PH02 (890-2267-3), PH02A (890-2267-4), PH03 (890-2267-5), PH03A (890-2267-6), BH01 (890-2267-7), BH01A (890-2267-8), BH02 (890-2267-9) and BH02 (890-2267-10).
Sample jars #3 & #6 became broken while transporting into the cooler- we were able to save the samples and put in new jars

GC VOA
Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-25279 and analytical batch 880-25476 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-24835 and analytical batch 880-24860 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-24835 and analytical batch 880-24860 recovered outside control limits for the following analytes: <AffectedAnalytes>.

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: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH01

Date Collected: 05/02/22 10:40
Date Received: 05/03/22 08:13
Sample Depth: 0.5'

Lab Sample ID: 890-2267-1
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		05/10/22 13:49	05/12/22 21:57	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/10/22 13:49	05/12/22 21:57	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/10/22 13:49	05/12/22 21:57	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/10/22 13:49	05/12/22 21:57	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/10/22 13:49	05/12/22 21:57	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/10/22 13:49	05/12/22 21:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*05/10/22 13:49*	*05/12/22 21:57*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*05/10/22 13:49*	*05/12/22 21:57*	*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			05/13/22 10:27	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			05/09/22 11:48	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		05/04/22 15:21	05/05/22 12:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0		mg/Kg		05/04/22 15:21	05/05/22 12:01	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/04/22 15:21	05/05/22 12:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*05/04/22 15:21*	*05/05/22 12:01*	*1*
o-Terphenyl	*104*		*70 - 130*	*05/04/22 15:21*	*05/05/22 12:01*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85.9**		5.00		mg/Kg			05/05/22 23:10	1

Client Sample ID: PH01A

Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13
Sample Depth: 2'

Lab Sample ID: 890-2267-2
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		05/10/22 13:49	05/12/22 22:18	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 22:18	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 22:18	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/10/22 13:49	05/12/22 22:18	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 22:18	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/10/22 13:49	05/12/22 22:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*05/10/22 13:49*	*05/12/22 22:18*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH01A

Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13
Sample Depth: 2'

Lab Sample ID: 890-2267-2
Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*05/10/22 13:49*	*05/12/22 22:18*	*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			05/13/22 10:27	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			05/09/22 11:48	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		05/04/22 15:21	05/05/22 13:02	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:02	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*107*		*70 - 130*	*05/04/22 15:21*	*05/05/22 13:02*	*1*
o-Terphenyl	*109*		*70 - 130*	*05/04/22 15:21*	*05/05/22 13:02*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.0**		5.02	mg/Kg			05/05/22 23:38	1

Client Sample ID: PH02

Date Collected: 05/02/22 13:35
Date Received: 05/03/22 08:13
Sample Depth: 1'

Lab Sample ID: 890-2267-3
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		05/10/22 13:49	05/12/22 22:39	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/10/22 13:49	05/12/22 22:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*05/10/22 13:49*	*05/12/22 22:39*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*05/10/22 13:49*	*05/12/22 22:39*	*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			05/13/22 10:27	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			05/09/22 11:48	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH02

Date Collected: 05/02/22 13:35
Date Received: 05/03/22 08:13
Sample Depth: 1'

Lab Sample ID: 890-2267-3
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 *+ *1	50.0		mg/Kg		05/04/22 15:21	05/05/22 13:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0		mg/Kg		05/04/22 15:21	05/05/22 13:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/04/22 15:21	05/05/22 13:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*05/04/22 15:21*	*05/05/22 13:23*	*1*
o-Terphenyl	*102*		*70 - 130*	*05/04/22 15:21*	*05/05/22 13:23*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**76.4**		4.99		mg/Kg			05/05/22 23:47	1

Client Sample ID: PH02A

Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13
Sample Depth: 2'

Lab Sample ID: 890-2267-4
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		05/10/22 13:49	05/12/22 22:59	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 22:59	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 22:59	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/10/22 13:49	05/12/22 22:59	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 22:59	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/10/22 13:49	05/12/22 22:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*05/10/22 13:49*	*05/12/22 22:59*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*05/10/22 13:49*	*05/12/22 22:59*	*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			05/13/22 10:27	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			05/09/22 11:48	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		05/04/22 15:21	05/05/22 13:43	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		05/04/22 15:21	05/05/22 13:43	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/04/22 15:21	05/05/22 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*05/04/22 15:21*	*05/05/22 13:43*	*1*
o-Terphenyl	*102*		*70 - 130*	*05/04/22 15:21*	*05/05/22 13:43*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH02A

Lab Sample ID: 890-2267-4
Matrix: Solid
Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13
Sample Depth: 2'

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.1		4.96		mg/Kg			05/05/22 23:56	1

Client Sample ID: PH03

Lab Sample ID: 890-2267-5
Matrix: Solid
Date Collected: 05/02/22 10:30
Date Received: 05/03/22 08:13
Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Toluene	<0.00198	U	0.00198		mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		05/10/22 13:49	05/13/22 00:23	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		05/10/22 13:49	05/13/22 00:23	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		05/10/22 13:49	05/13/22 00:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*	*05/10/22 13:49*	*05/13/22 00:23*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*05/10/22 13:49*	*05/13/22 00:23*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			05/13/22 10:27	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			05/09/22 11:48	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		05/04/22 15:21	05/05/22 14:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0		mg/Kg		05/04/22 15:21	05/05/22 14:04	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/04/22 15:21	05/05/22 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*05/04/22 15:21*	*05/05/22 14:04*	*1*
o-Terphenyl	*102*		*70 - 130*	*05/04/22 15:21*	*05/05/22 14:04*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36.9		5.03		mg/Kg			05/06/22 11:38	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH03A

Date Collected: 05/02/22 14:35
Date Received: 05/03/22 08:13
Sample Depth: 2'

Lab Sample ID: 890-2267-6
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		05/10/22 13:49	05/13/22 00:44	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/13/22 00:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/13/22 00:44	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		05/10/22 13:49	05/13/22 00:44	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/13/22 00:44	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		05/10/22 13:49	05/13/22 00:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*05/10/22 13:49*	*05/13/22 00:44*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*05/10/22 13:49*	*05/13/22 00:44*	*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			05/13/22 10:27	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			05/09/22 11:48	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		05/04/22 15:21	05/05/22 14:26	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		05/04/22 15:21	05/05/22 14:26	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/04/22 15:21	05/05/22 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*111*		*70 - 130*	*05/04/22 15:21*	*05/05/22 14:26*	*1*
o-Terphenyl	*113*		*70 - 130*	*05/04/22 15:21*	*05/05/22 14:26*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36.3**		4.99		mg/Kg			05/06/22 11:47	1

Client Sample ID: BH01

Date Collected: 05/02/22 10:35
Date Received: 05/03/22 08:13
Sample Depth: 0.5'

Lab Sample ID: 890-2267-7
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		05/10/22 13:49	05/13/22 01:05	1
Toluene	<0.00201	U	0.00201		mg/Kg		05/10/22 13:49	05/13/22 01:05	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		05/10/22 13:49	05/13/22 01:05	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		05/10/22 13:49	05/13/22 01:05	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		05/10/22 13:49	05/13/22 01:05	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		05/10/22 13:49	05/13/22 01:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*05/10/22 13:49*	*05/13/22 01:05*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: BH01

Date Collected: 05/02/22 10:35
Date Received: 05/03/22 08:13
Sample Depth: 0.5'

Lab Sample ID: 890-2267-7
Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*05/10/22 13:49*	*05/13/22 01:05*	*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			05/13/22 10:27	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			05/09/22 11:48	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		05/04/22 15:21	05/05/22 14:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:47	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*92*		*70 - 130*	*05/04/22 15:21*	*05/05/22 14:47*	*1*
o-Terphenyl	*93*		*70 - 130*	*05/04/22 15:21*	*05/05/22 14:47*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46.1**		5.02	mg/Kg			05/06/22 00:42	1

Client Sample ID: BH01A

Date Collected: 05/02/22 14:40
Date Received: 05/03/22 08:13
Sample Depth: 1'

Lab Sample ID: 890-2267-8
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		05/10/22 13:49	05/13/22 01:26	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 01:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*05/10/22 13:49*	*05/13/22 01:26*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*05/10/22 13:49*	*05/13/22 01:26*	*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			05/13/22 10:27	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			05/09/22 11:48	1

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Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: BH01A

Date Collected: 05/02/22 14:40
Date Received: 05/03/22 08:13
Sample Depth: 1'

Lab Sample ID: 890-2267-8
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	<49.9	U *+ *1	49.9		mg/Kg		05/04/22 15:21	05/05/22 15:08	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9		mg/Kg		05/04/22 15:21	05/05/22 15:08	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		05/04/22 15:21	05/05/22 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*05/04/22 15:21*	*05/05/22 15:08*	*1*
o-Terphenyl	*96*		*70 - 130*	*05/04/22 15:21*	*05/05/22 15:08*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14.6**		4.99		mg/Kg			05/06/22 00:51	1

Client Sample ID: BH02

Date Collected: 05/02/22 13:17
Date Received: 05/03/22 08:13
Sample Depth: 1'

Lab Sample ID: 890-2267-9
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		05/10/22 13:49	05/13/22 01:46	1
Toluene	<0.00199	U	0.00199		mg/Kg		05/10/22 13:49	05/13/22 01:46	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		05/10/22 13:49	05/13/22 01:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		05/10/22 13:49	05/13/22 01:46	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		05/10/22 13:49	05/13/22 01:46	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		05/10/22 13:49	05/13/22 01:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*05/10/22 13:49*	*05/13/22 01:46*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*05/10/22 13:49*	*05/13/22 01:46*	*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			05/13/22 10:27	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**110**		50.0		mg/Kg			05/09/22 11:48	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		05/04/22 15:21	05/05/22 15:29	1
Diesel Range Organics (Over C10-C28)	**110**	***1**	50.0		mg/Kg		05/04/22 15:21	05/05/22 15:29	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/04/22 15:21	05/05/22 15:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*05/04/22 15:21*	*05/05/22 15:29*	*1*
o-Terphenyl	*121*		*70 - 130*	*05/04/22 15:21*	*05/05/22 15:29*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: BH02

Date Collected: 05/02/22 13:17
Date Received: 05/03/22 08:13
Sample Depth: 1'

Lab Sample ID: 890-2267-9
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15.4**		4.95		mg/Kg			05/06/22 01:00	1

Client Sample ID: BH02

Date Collected: 05/02/22 14:00
Date Received: 05/03/22 08:13
Sample Depth: 1.5'

Lab Sample ID: 890-2267-10
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		05/10/22 13:49	05/13/22 02:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/13/22 02:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/13/22 02:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		05/10/22 13:49	05/13/22 02:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/13/22 02:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		05/10/22 13:49	05/13/22 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*05/10/22 13:49*	*05/13/22 02:07*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*05/10/22 13:49*	*05/13/22 02:07*	*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			05/13/22 10:27	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**489**		49.9		mg/Kg			05/09/22 11:48	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		05/04/22 15:21	05/05/22 15:50	1
Diesel Range Organics (Over C10-C28)	**428**	***1**	49.9		mg/Kg		05/04/22 15:21	05/05/22 15:50	1
Oil Range Organics (Over C28-C36)	**60.9**		49.9		mg/Kg		05/04/22 15:21	05/05/22 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*05/04/22 15:21*	*05/05/22 15:50*	*1*
o-Terphenyl	*104*		*70 - 130*	*05/04/22 15:21*	*05/05/22 15:50*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26.2**		5.03		mg/Kg			05/06/22 01:10	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-14390-A-4-E MS	Matrix Spike	114	98
880-14390-A-4-F MSD	Matrix Spike Duplicate	92	106
890-2267-1	PH01	103	108
890-2267-2	PH01A	99	106
890-2267-3	PH02	97	102
890-2267-4	PH02A	96	107
890-2267-5	PH03	90	103
890-2267-6	PH03A	98	105
890-2267-7	BH01	108	105
890-2267-8	BH01A	110	100
890-2267-9	BH02	107	106
890-2267-10	BH02	101	106
LCS 880-25279/1-A	Lab Control Sample	105	104
LCSD 880-25279/2-A	Lab Control Sample Dup	105	102
MB 880-25279/5-A	Method Blank	93	98

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)
890-2267-1	PH01	106	104
890-2267-1 MS	PH01	82	73
890-2267-1 MSD	PH01	83	74
890-2267-2	PH01A	107	109
890-2267-3	PH02	98	102
890-2267-4	PH02A	99	102
890-2267-5	PH03	97	102
890-2267-6	PH03A	111	113
890-2267-7	BH01	92	93
890-2267-8	BH01A	94	96
890-2267-9	BH02	118	121
890-2267-10	BH02	103	104
LCS 880-24835/2-A	Lab Control Sample	121	119
LCSD 880-24835/3-A	Lab Control Sample Dup	106	99
MB 880-24835/1-A	Method Blank	116	126

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-25279/5-A
Matrix: Solid
Analysis Batch: 25476

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25279

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 19:31	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 19:31	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 19:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/10/22 13:49	05/12/22 19:31	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/22 13:49	05/12/22 19:31	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/10/22 13:49	05/12/22 19:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*05/10/22 13:49*	*05/12/22 19:31*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*05/10/22 13:49*	*05/12/22 19:31*	*1*

Lab Sample ID: LCS 880-25279/1-A
Matrix: Solid
Analysis Batch: 25476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25279

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09308		mg/Kg		93	70 - 130		
Toluene			0.100	0.09346		mg/Kg		93	70 - 130		
Ethylbenzene			0.100	0.1022		mg/Kg		102	70 - 130		
m-Xylene & p-Xylene			0.200	0.2154		mg/Kg		108	70 - 130		
o-Xylene			0.100	0.1053		mg/Kg		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 880-25279/2-A
Matrix: Solid
Analysis Batch: 25476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25279

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08522		mg/Kg		85	70 - 130	9	35
Toluene			0.100	0.08397		mg/Kg		84	70 - 130	11	35
Ethylbenzene			0.100	0.08828		mg/Kg		88	70 - 130	15	35
m-Xylene & p-Xylene			0.200	0.1875		mg/Kg		94	70 - 130	14	35
o-Xylene			0.100	0.09295		mg/Kg		93	70 - 130	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 880-14390-A-4-E MS
Matrix: Solid
Analysis Batch: 25476

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 25279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U F1	0.0998	0.06525	F1	mg/Kg		65	70 - 130		
Toluene	<0.00200	U	0.0998	0.07114		mg/Kg		71	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

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

Lab Sample ID: 880-14390-A-4-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 25476 — **Prep Batch: 25279**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0998	0.07910		mg/Kg		79	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1707		mg/Kg		86	70 - 130
o-Xylene	<0.00200	U	0.0998	0.08545		mg/Kg		86	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 880-14390-A-4-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 25476 — **Prep Batch: 25279**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0994	0.08395		mg/Kg		84	70 - 130	25	35
Toluene	<0.00200	U	0.0994	0.07509		mg/Kg		76	70 - 130	5	35
Ethylbenzene	<0.00200	U	0.0994	0.07445		mg/Kg		75	70 - 130	6	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1499		mg/Kg		75	70 - 130	13	35
o-Xylene	<0.00200	U	0.0994	0.07442		mg/Kg		75	70 - 130	14	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

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

Lab Sample ID: MB 880-24835/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 24860 — **Prep Batch: 24835**

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		05/04/22 15:21	05/05/22 11:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 11:00	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 11:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*05/04/22 15:21*	*05/05/22 11:00*	*1*
o-Terphenyl	*126*		*70 - 130*	*05/04/22 15:21*	*05/05/22 11:00*	*1*

Lab Sample ID: LCS 880-24835/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 24860 — **Prep Batch: 24835**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1318	*+	mg/Kg		132	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1177		mg/Kg		118	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

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

Lab Sample ID: LCS 880-24835/2-A
Matrix: Solid
Analysis Batch: 24860

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24835

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	121		70 - 130
o-Terphenyl	119		70 - 130

Lab Sample ID: LCSD 880-24835/3-A
Matrix: Solid
Analysis Batch: 24860

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24835

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1039	*1	mg/Kg		104	70 - 130	24	20
Diesel Range Organics (Over C10-C28)			1000	953.4	*1	mg/Kg		95	70 - 130	21	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	99		70 - 130

Lab Sample ID: 890-2267-1 MS
Matrix: Solid
Analysis Batch: 24860

Client Sample ID: PH01
Prep Type: Total/NA
Prep Batch: 24835

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+ *1	1000	971.4		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *1	1000	754.1		mg/Kg		73	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	73		70 - 130

Lab Sample ID: 890-2267-1 MSD
Matrix: Solid
Analysis Batch: 24860

Client Sample ID: PH01
Prep Type: Total/NA
Prep Batch: 24835

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+ *1	998	980.9		mg/Kg		94	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	<50.0	U *1	998	767.7		mg/Kg		75	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	83		70 - 130
o-Terphenyl	74		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-24815/1-A
Matrix: Solid
Analysis Batch: 24888

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			05/05/22 22:43	1

Lab Sample ID: LCS 880-24815/2-A
Matrix: Solid
Analysis Batch: 24888

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	254.6		mg/Kg		102	90 - 110		

Lab Sample ID: LCSD 880-24815/3-A
Matrix: Solid
Analysis Batch: 24888

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	252.2		mg/Kg		101	90 - 110	1	20

Lab Sample ID: 890-2267-1 MS
Matrix: Solid
Analysis Batch: 24888

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	85.9		250	332.8		mg/Kg		99	90 - 110		

Lab Sample ID: 890-2267-1 MSD
Matrix: Solid
Analysis Batch: 24888

Client Sample ID: PH01
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	85.9		250	331.3		mg/Kg		98	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

GC VOA

Prep Batch: 25279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	5035	
890-2267-2	PH01A	Total/NA	Solid	5035	
890-2267-3	PH02	Total/NA	Solid	5035	
890-2267-4	PH02A	Total/NA	Solid	5035	
890-2267-5	PH03	Total/NA	Solid	5035	
890-2267-6	PH03A	Total/NA	Solid	5035	
890-2267-7	BH01	Total/NA	Solid	5035	
890-2267-8	BH01A	Total/NA	Solid	5035	
890-2267-9	BH02	Total/NA	Solid	5035	
890-2267-10	BH02	Total/NA	Solid	5035	
MB 880-25279/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25279/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25279/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14390-A-4-E MS	Matrix Spike	Total/NA	Solid	5035	
880-14390-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 25476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	8021B	25279
890-2267-2	PH01A	Total/NA	Solid	8021B	25279
890-2267-3	PH02	Total/NA	Solid	8021B	25279
890-2267-4	PH02A	Total/NA	Solid	8021B	25279
890-2267-5	PH03	Total/NA	Solid	8021B	25279
890-2267-6	PH03A	Total/NA	Solid	8021B	25279
890-2267-7	BH01	Total/NA	Solid	8021B	25279
890-2267-8	BH01A	Total/NA	Solid	8021B	25279
890-2267-9	BH02	Total/NA	Solid	8021B	25279
890-2267-10	BH02	Total/NA	Solid	8021B	25279
MB 880-25279/5-A	Method Blank	Total/NA	Solid	8021B	25279
LCS 880-25279/1-A	Lab Control Sample	Total/NA	Solid	8021B	25279
LCSD 880-25279/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25279
880-14390-A-4-E MS	Matrix Spike	Total/NA	Solid	8021B	25279
880-14390-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25279

Analysis Batch: 25522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	Total BTEX	
890-2267-2	PH01A	Total/NA	Solid	Total BTEX	
890-2267-3	PH02	Total/NA	Solid	Total BTEX	
890-2267-4	PH02A	Total/NA	Solid	Total BTEX	
890-2267-5	PH03	Total/NA	Solid	Total BTEX	
890-2267-6	PH03A	Total/NA	Solid	Total BTEX	
890-2267-7	BH01	Total/NA	Solid	Total BTEX	
890-2267-8	BH01A	Total/NA	Solid	Total BTEX	
890-2267-9	BH02	Total/NA	Solid	Total BTEX	
890-2267-10	BH02	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

GC Semi VOA

Prep Batch: 24835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	8015NM Prep	
890-2267-2	PH01A	Total/NA	Solid	8015NM Prep	
890-2267-3	PH02	Total/NA	Solid	8015NM Prep	
890-2267-4	PH02A	Total/NA	Solid	8015NM Prep	
890-2267-5	PH03	Total/NA	Solid	8015NM Prep	
890-2267-6	PH03A	Total/NA	Solid	8015NM Prep	
890-2267-7	BH01	Total/NA	Solid	8015NM Prep	
890-2267-8	BH01A	Total/NA	Solid	8015NM Prep	
890-2267-9	BH02	Total/NA	Solid	8015NM Prep	
890-2267-10	BH02	Total/NA	Solid	8015NM Prep	
MB 880-24835/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-24835/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-24835/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2267-1 MS	PH01	Total/NA	Solid	8015NM Prep	
890-2267-1 MSD	PH01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 24860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	8015B NM	24835
890-2267-2	PH01A	Total/NA	Solid	8015B NM	24835
890-2267-3	PH02	Total/NA	Solid	8015B NM	24835
890-2267-4	PH02A	Total/NA	Solid	8015B NM	24835
890-2267-5	PH03	Total/NA	Solid	8015B NM	24835
890-2267-6	PH03A	Total/NA	Solid	8015B NM	24835
890-2267-7	BH01	Total/NA	Solid	8015B NM	24835
890-2267-8	BH01A	Total/NA	Solid	8015B NM	24835
890-2267-9	BH02	Total/NA	Solid	8015B NM	24835
890-2267-10	BH02	Total/NA	Solid	8015B NM	24835
MB 880-24835/1-A	Method Blank	Total/NA	Solid	8015B NM	24835
LCS 880-24835/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	24835
LCSD 880-24835/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	24835
890-2267-1 MS	PH01	Total/NA	Solid	8015B NM	24835
890-2267-1 MSD	PH01	Total/NA	Solid	8015B NM	24835

Analysis Batch: 25086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	8015 NM	
890-2267-2	PH01A	Total/NA	Solid	8015 NM	
890-2267-3	PH02	Total/NA	Solid	8015 NM	
890-2267-4	PH02A	Total/NA	Solid	8015 NM	
890-2267-5	PH03	Total/NA	Solid	8015 NM	
890-2267-6	PH03A	Total/NA	Solid	8015 NM	
890-2267-7	BH01	Total/NA	Solid	8015 NM	
890-2267-8	BH01A	Total/NA	Solid	8015 NM	
890-2267-9	BH02	Total/NA	Solid	8015 NM	
890-2267-10	BH02	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

HPLC/IC

Leach Batch: 24815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Soluble	Solid	DI Leach	
890-2267-2	PH01A	Soluble	Solid	DI Leach	
890-2267-3	PH02	Soluble	Solid	DI Leach	
890-2267-4	PH02A	Soluble	Solid	DI Leach	
890-2267-5	PH03	Soluble	Solid	DI Leach	
890-2267-6	PH03A	Soluble	Solid	DI Leach	
890-2267-7	BH01	Soluble	Solid	DI Leach	
890-2267-8	BH01A	Soluble	Solid	DI Leach	
890-2267-9	BH02	Soluble	Solid	DI Leach	
890-2267-10	BH02	Soluble	Solid	DI Leach	
MB 880-24815/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-24815/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-24815/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2267-1 MS	PH01	Soluble	Solid	DI Leach	
890-2267-1 MSD	PH01	Soluble	Solid	DI Leach	

Analysis Batch: 24888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Soluble	Solid	300.0	24815
890-2267-2	PH01A	Soluble	Solid	300.0	24815
890-2267-3	PH02	Soluble	Solid	300.0	24815
890-2267-4	PH02A	Soluble	Solid	300.0	24815
890-2267-5	PH03	Soluble	Solid	300.0	24815
890-2267-6	PH03A	Soluble	Solid	300.0	24815
890-2267-7	BH01	Soluble	Solid	300.0	24815
890-2267-8	BH01A	Soluble	Solid	300.0	24815
890-2267-9	BH02	Soluble	Solid	300.0	24815
890-2267-10	BH02	Soluble	Solid	300.0	24815
MB 880-24815/1-A	Method Blank	Soluble	Solid	300.0	24815
LCS 880-24815/2-A	Lab Control Sample	Soluble	Solid	300.0	24815
LCSD 880-24815/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	24815
890-2267-1 MS	PH01	Soluble	Solid	300.0	24815
890-2267-1 MSD	PH01	Soluble	Solid	300.0	24815

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH01

Date Collected: 05/02/22 10:40
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 21:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 12:01	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/05/22 23:10	CH	XEN MID

Client Sample ID: PH01A

Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 22:18	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 13:02	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/05/22 23:38	CH	XEN MID

Client Sample ID: PH02

Date Collected: 05/02/22 13:35
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 22:39	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 13:23	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/05/22 23:47	CH	XEN MID

Client Sample ID: PH02A

Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-4

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			5.01 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 22:59	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: PH02A
Date Collected: 05/02/22 13:40
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-4
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			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 13:43	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/05/22 23:56	CH	XEN MID

Client Sample ID: PH03
Date Collected: 05/02/22 10:30
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-5
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			5.05 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 00:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 14:04	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 11:38	CH	XEN MID

Client Sample ID: PH03A
Date Collected: 05/02/22 14:35
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-6
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			4.99 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 00:44	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 14:26	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 11:47	CH	XEN MID

Client Sample ID: BH01
Date Collected: 05/02/22 10:35
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-7
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			4.98 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 01:05	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 14:47	AJ	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Client Sample ID: BH01

Date Collected: 05/02/22 10:35
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-7
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	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 00:42	CH	XEN MID

Client Sample ID: BH01A

Date Collected: 05/02/22 14:40
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-8
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	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 01:26	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 15:08	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 00:51	CH	XEN MID

Client Sample ID: BH02

Date Collected: 05/02/22 13:17
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 01:46	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 15:29	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 01:00	CH	XEN MID

Client Sample ID: BH02

Date Collected: 05/02/22 14:00
Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-10
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	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 02:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 15:50	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 01:10	CH	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

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: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

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: PLU 30 Big Sinks CTB

Job ID: 890-2267-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2267-1	PH01	Solid	05/02/22 10:40	05/03/22 08:13	0.5'
890-2267-2	PH01A	Solid	05/02/22 13:40	05/03/22 08:13	2'
890-2267-3	PH02	Solid	05/02/22 13:35	05/03/22 08:13	1'
890-2267-4	PH02A	Solid	05/02/22 13:40	05/03/22 08:13	2'
890-2267-5	PH03	Solid	05/02/22 10:30	05/03/22 08:13	0.5'
890-2267-6	PH03A	Solid	05/02/22 14:35	05/03/22 08:13	2'
890-2267-7	BH01	Solid	05/02/22 10:35	05/03/22 08:13	0.5'
890-2267-8	BH01A	Solid	05/02/22 14:40	05/03/22 08:13	1'
890-2267-9	BH02	Solid	05/02/22 13:17	05/03/22 08:13	1'
890-2267-10	BH02	Solid	05/02/22 14:00	05/03/22 08:13	1.5'

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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: _____

www.xenco.com Page 1 of 1

Project Manager:	TACOMA Morrissey	Bill to: (if different)	Adrian Baker
Company Name:	Ensolum LLC.	Company Name:	XTO ENERGY
Address:	601 N. Marienfeld ST. Suite 400	Address:	3104 E GREEN ST.
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Carlsbad, NM 88220
Phone:	337.257.8307	Email:	tmorrissey@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:	PLU 30 BIG SINKS CTB	Turn Around	☒ Routine ☐ Rush
Project Number:	03E155 8016	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Conner Shore		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM-227
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	2.2
Total Containers:		Corrected Temperature:	2.0

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chlorides	BTEX	TPH	Sample Comments
PH03	S	05/02	1040	0.5'	G	1	X	X	X	
PH03	S	05/02	1340	2'	G	1				
PH04			1335	1'						
PH04			1340	2'						
PH05			1030	0.5'						
PH05			1435	2'						
BH06			1035	0.5						
BH06			1440	1'						
BH07			1317	1'						
BH07			1400	1.5'						

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		5.3.22 0813	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2267-1
SDG Number: 03E1558016

Login Number: 2267
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: 890-2267-1
SDG Number: 03E1558016

Login Number: 2267
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 05/04/22 10:56 AM

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

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-2274-1
Laboratory Sample Delivery Group: 03E1558016
Client Project/Site: PLU 30 BIG SINKS CTB

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
5/11/2022 7:12:57 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: PLU 30 BIG SINKS CTB

Laboratory Job ID: 890-2274-1
SDG: 03E1558016

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Job ID: 890-2274-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2274-1

Receipt
The samples were received on 5/3/2022 4:45 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 2.8°C

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-24964 and analytical batch 880-25052 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: FS01 (890-2274-1), FS02 (890-2274-2), FS03 (890-2274-3) and FS04 (890-2274-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC
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: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS01

Lab Sample ID: 890-2274-1
Matrix: Solid

Date Collected: 05/03/22 11:00
Date Received: 05/03/22 16:45
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		05/06/22 11:22	05/09/22 01:57	1
Toluene	**0.00868**		0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
Ethylbenzene	**0.0141**		0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
m-Xylene & p-Xylene	**0.197**		0.00402	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
o-Xylene	**0.0796**		0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
Xylenes, Total	**0.277**		0.00402	mg/Kg		05/06/22 11:22	05/09/22 01:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*05/06/22 11:22*	*05/09/22 01:57*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*05/06/22 11:22*	*05/09/22 01:57*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.299**		0.00402	mg/Kg			05/09/22 15:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**13300**		250	mg/Kg			05/09/22 11:58	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	**1290**		250	mg/Kg		05/05/22 14:19	05/07/22 08:09	5
Diesel Range Organics (Over C10-C28)	**10400**		250	mg/Kg		05/05/22 14:19	05/07/22 08:09	5
Oil Range Organics (Over C28-C36)	**1640**		250	mg/Kg		05/05/22 14:19	05/07/22 08:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*134*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 08:09*	*5*
o-Terphenyl	*121*		*70 - 130*	*05/05/22 14:19*	*05/07/22 08:09*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**394**		5.01	mg/Kg			05/08/22 17:23	1

Client Sample ID: FS02

Lab Sample ID: 890-2274-2
Matrix: Solid

Date Collected: 05/03/22 11:05
Date Received: 05/03/22 16:45
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		05/06/22 11:22	05/09/22 02:17	1
Toluene	**0.112**		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
Ethylbenzene	**0.0451**		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
m-Xylene & p-Xylene	**0.523**		0.00400	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
o-Xylene	**0.164**		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
Xylenes, Total	**0.687**		0.00400	mg/Kg		05/06/22 11:22	05/09/22 02:17	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS02

Date Collected: 05/03/22 11:05
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-2

Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*05/06/22 11:22*	*05/09/22 02:17*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*05/06/22 11:22*	*05/09/22 02:17*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.844**		0.00400	mg/Kg			05/09/22 15:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**10400**		49.9	mg/Kg			05/09/22 11:58	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	**1180**		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	1
Diesel Range Organics (Over C10-C28)	**7810**		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	1
Oil Range Organics (Over C28-C36)	**1380**		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*142*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 02:19*	*1*
o-Terphenyl	*126*		*70 - 130*	*05/05/22 14:19*	*05/07/22 02:19*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**141**		5.00	mg/Kg			05/08/22 17:32	1

Client Sample ID: FS03

Date Collected: 05/03/22 11:10
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-3

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		05/06/22 11:22	05/09/22 02:38	1
Toluene	**0.107**		0.00199	mg/Kg		05/06/22 11:22	05/09/22 02:38	1
Ethylbenzene	**0.192**		0.00199	mg/Kg		05/06/22 11:22	05/09/22 02:38	1
m-Xylene & p-Xylene	**35.7**		0.200	mg/Kg		05/09/22 11:01	05/10/22 02:23	50
o-Xylene	**9.13**		0.0998	mg/Kg		05/09/22 11:01	05/10/22 02:23	50
Xylenes, Total	**44.8**		0.200	mg/Kg		05/09/22 11:01	05/10/22 02:23	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*473*	*S1+*	*70 - 130*	*05/06/22 11:22*	*05/09/22 02:38*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*	*05/06/22 11:22*	*05/09/22 02:38*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**45.1**		0.200	mg/Kg			05/09/22 15:24	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS03

Date Collected: 05/03/22 11:10
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	15500		249		mg/Kg			05/09/22 11:58	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	2140		249		mg/Kg		05/05/22 14:19	05/07/22 08:29	5
Diesel Range Organics (Over C10-C28)	11500		249		mg/Kg		05/05/22 14:19	05/07/22 08:29	5
Oil Range Organics (Over C28-C36)	1880		249		mg/Kg		05/05/22 14:19	05/07/22 08:29	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*148*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 08:29*	*5*
o-Terphenyl	*114*		*70 - 130*	*05/05/22 14:19*	*05/07/22 08:29*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	723		4.97		mg/Kg			05/08/22 17:41	1

Client Sample ID: FS04

Date Collected: 05/03/22 11:15
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-4

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		05/06/22 11:22	05/09/22 02:58	1
Toluene	0.0917		0.00200		mg/Kg		05/06/22 11:22	05/09/22 02:58	1
Ethylbenzene	0.0562		0.00200		mg/Kg		05/06/22 11:22	05/09/22 02:58	1
m-Xylene & p-Xylene	0.688		0.00401		mg/Kg		05/06/22 11:22	05/09/22 02:58	1
o-Xylene	0.251		0.00200		mg/Kg		05/06/22 11:22	05/09/22 02:58	1
Xylenes, Total	0.939		0.00401		mg/Kg		05/06/22 11:22	05/09/22 02:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*166*	*S1+*	*70 - 130*	*05/06/22 11:22*	*05/09/22 02:58*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*05/06/22 11:22*	*05/09/22 02:58*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	1.09		0.00401		mg/Kg			05/09/22 15:24	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	18800		250		mg/Kg			05/09/22 11:58	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	2220		250		mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Diesel Range Organics (Over C10-C28)	14200		250		mg/Kg		05/05/22 14:19	05/07/22 08:49	5

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS04

Date Collected: 05/03/22 11:15
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over C28-C36)	2330		250		mg/Kg		05/05/22 14:19	05/07/22 08:49	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*151*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 08:49*	*5*
o-Terphenyl	*248*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 08:49*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	790		4.95		mg/Kg			05/08/22 17:50	1

Client Sample ID: FS05

Date Collected: 05/03/22 11:10
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-5
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00362		0.00202		mg/Kg		05/06/22 11:22	05/09/22 03:19	1
Toluene	0.200		0.00202		mg/Kg		05/06/22 11:22	05/09/22 03:19	1
Ethylbenzene	0.0657		0.00202		mg/Kg		05/06/22 11:22	05/09/22 03:19	1
m-Xylene & p-Xylene	0.800		0.00403		mg/Kg		05/06/22 11:22	05/09/22 03:19	1
o-Xylene	0.277		0.00202		mg/Kg		05/06/22 11:22	05/09/22 03:19	1
Xylenes, Total	1.08		0.00403		mg/Kg		05/06/22 11:22	05/09/22 03:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*125*		*70 - 130*	*05/06/22 11:22*	*05/09/22 03:19*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*05/06/22 11:22*	*05/09/22 03:19*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	1.35		0.00403		mg/Kg			05/09/22 15:24	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	12900		250		mg/Kg			05/09/22 11:58	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	496		250		mg/Kg		05/05/22 14:19	05/07/22 08:29	5
Diesel Range Organics (Over C10-C28)	12400		250		mg/Kg		05/05/22 14:19	05/07/22 08:29	5
Oll Range Organics (Over C28-C36)	<250	U	250		mg/Kg		05/05/22 14:19	05/07/22 08:29	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*138*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 08:29*	*5*
o-Terphenyl	*122*		*70 - 130*	*05/05/22 14:19*	*05/07/22 08:29*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	528		5.04		mg/Kg			05/08/22 17:59	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS06

Date Collected: 05/03/22 11:05
Date Received: 05/03/22 16:45
Sample Depth: 0.5'

Lab Sample ID: 890-2274-6

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.400	U	0.400		mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Toluene	<0.400	U	0.400		mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Ethylbenzene	**1.28**		0.400		mg/Kg		05/10/22 10:17	05/11/22 01:40	200
m-Xylene & p-Xylene	**7.60**		0.800		mg/Kg		05/10/22 10:17	05/11/22 01:40	200
o-Xylene	**1.78**		0.400		mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Xylenes, Total	**9.38**		0.800		mg/Kg		05/10/22 10:17	05/11/22 01:40	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*	*05/10/22 10:17*	*05/11/22 01:40*	*200*
1,4-Difluorobenzene (Surr)	*76*		*70 - 130*	*05/10/22 10:17*	*05/11/22 01:40*	*200*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.177**		0.00199		mg/Kg			05/09/22 15:24	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**16600**		250		mg/Kg			05/09/22 11:58	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	**617**		250		mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Diesel Range Organics (Over C10-C28)	**16000**		250		mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Oll Range Organics (Over C28-C36)	<250	U	250		mg/Kg		05/05/22 14:19	05/07/22 08:49	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*131*	*S1+*	*70 - 130*	*05/05/22 14:19*	*05/07/22 08:49*	*5*
o-Terphenyl	*121*		*70 - 130*	*05/05/22 14:19*	*05/07/22 08:49*	*5*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**106**		5.01		mg/Kg			05/10/22 17:54	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-14398-A-1-C MS	Matrix Spike	103	101
880-14398-A-1-D MSD	Matrix Spike Duplicate	101	104
880-14479-A-6-D MS	Matrix Spike	108	95
880-14479-A-6-E MSD	Matrix Spike Duplicate	117	90
890-2252-A-5-D MS	Matrix Spike	122	90
890-2252-A-5-E MSD	Matrix Spike Duplicate	126	86
890-2274-1	FS01	114	88
890-2274-2	FS02	103	89
890-2274-3	FS03	473 S1+	78
890-2274-4	FS04	166 S1+	86
890-2274-5	FS05	125	88
890-2274-6	FS06	138 S1+	76
LCS 880-24964/1-A	Lab Control Sample	107	100
LCS 880-25072/1-A	Lab Control Sample	124	89
LCS 880-25242/1-A	Lab Control Sample	107	95
LCSD 880-24964/2-A	Lab Control Sample Dup	108	100
LCSD 880-25072/2-A	Lab Control Sample Dup	118	91
LCSD 880-25242/2-A	Lab Control Sample Dup	112	93
MB 880-24964/5-A	Method Blank	98	95
MB 880-25055/8	Method Blank	104	89
MB 880-25072/5-A	Method Blank	103	89
MB 880-25078/5-A	Method Blank	100	91
MB 880-25242/5-A	Method Blank	100	91

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)
890-2271-A-61-E MS	Matrix Spike	104	92
890-2271-A-61-F MSD	Matrix Spike Duplicate	89	78
890-2274-1	FS01	134 S1+	121
890-2274-2	FS02	142 S1+	126
890-2274-3	FS03	148 S1+	114
890-2274-4	FS04	151 S1+	248 S1+
890-2274-5	FS05	138 S1+	122
890-2274-6	FS06	131 S1+	121
LCS 880-24911/2-A	Lab Control Sample	101	95
LCSD 880-24911/3-A	Lab Control Sample Dup	111	105
MB 880-24911/1-A	Method Blank	98	102

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-24964/5-A
Matrix: Solid
Analysis Batch: 25052

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24964

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/06/22 11:22	05/08/22 19:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/06/22 11:22	05/08/22 19:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/06/22 11:22	05/08/22 19:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/06/22 11:22	05/08/22 19:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/06/22 11:22	05/08/22 19:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/06/22 11:22	05/08/22 19:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*05/06/22 11:22*	*05/08/22 19:12*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*05/06/22 11:22*	*05/08/22 19:12*	*1*

Lab Sample ID: LCS 880-24964/1-A
Matrix: Solid
Analysis Batch: 25052

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24964

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08587		mg/Kg		86	70 - 130
Toluene	0.100	0.09093		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.09444		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1946		mg/Kg		97	70 - 130
o-Xylene	0.100	0.1086		mg/Kg		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-24964/2-A
Matrix: Solid
Analysis Batch: 25052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24964

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	3	35
Toluene	0.100	0.08583		mg/Kg		86	70 - 130	6	35
Ethylbenzene	0.100	0.08732		mg/Kg		87	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.1780		mg/Kg		89	70 - 130	9	35
o-Xylene	0.100	0.09949		mg/Kg		99	70 - 130	9	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 880-14398-A-1-C MS
Matrix: Solid
Analysis Batch: 25052

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 24964

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.0996	0.04611	F1	mg/Kg		46	70 - 130
Toluene	<0.00200	U F1	0.0996	0.03905	F1	mg/Kg		38	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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

Lab Sample ID: 880-14398-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 25052 — **Prep Batch: 24964**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0996	0.03452	F1	mg/Kg		34	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.199	0.06823	F1	mg/Kg		34	70 - 130
o-Xylene	<0.00200	U F1	0.0996	0.03400	F1	mg/Kg		34	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-14398-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 25052 — **Prep Batch: 24964**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0998	0.04463	F1	mg/Kg		45	70 - 130	3	35
Toluene	<0.00200	U F1	0.0998	0.03916	F1	mg/Kg		38	70 - 130	0	35
Ethylbenzene	<0.00200	U F1	0.0998	0.03504	F1	mg/Kg		35	70 - 130	1	35
m-Xylene & p-Xylene	<0.00401	U F1	0.200	0.07036	F1	mg/Kg		35	70 - 130	3	35
o-Xylene	<0.00200	U F1	0.0998	0.03610	F1	mg/Kg		36	70 - 130	6	35

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

Lab Sample ID: MB 880-25055/8 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 25055

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg			05/09/22 11:01	1
Toluene	<0.00200	U	0.00200	mg/Kg			05/09/22 11:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg			05/09/22 11:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg			05/09/22 11:01	1
o-Xylene	<0.00200	U	0.00200	mg/Kg			05/09/22 11:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg			05/09/22 11:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*05/09/22 11:01*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*		*05/09/22 11:01*	*1*

Lab Sample ID: MB 880-25072/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 25055 — **Prep Batch: 25072**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/09/22 11:01	05/09/22 23:59	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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

Lab Sample ID: MB 880-25072/5-A
Matrix: Solid
Analysis Batch: 25055

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25072

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/09/22 11:01	05/09/22 23:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*05/09/22 11:01*	*05/09/22 23:59*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*05/09/22 11:01*	*05/09/22 23:59*	*1*

Lab Sample ID: LCS 880-25072/1-A
Matrix: Solid
Analysis Batch: 25055

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25072

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.07686		mg/Kg		77	70 - 130
Toluene	0.100	0.09570		mg/Kg		96	70 - 130
Ethylbenzene	0.100	0.1080		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	0.200	0.2251		mg/Kg		113	70 - 130
o-Xylene	0.100	0.1157		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 880-25072/2-A
Matrix: Solid
Analysis Batch: 25055

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25072

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07208		mg/Kg		72	70 - 130	6	35
Toluene	0.100	0.08611		mg/Kg		86	70 - 130	11	35
Ethylbenzene	0.100	0.09489		mg/Kg		95	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.1962		mg/Kg		98	70 - 130	14	35
o-Xylene	0.100	0.1005		mg/Kg		100	70 - 130	14	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 890-2252-A-5-D MS
Matrix: Solid
Analysis Batch: 25055

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 25072

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.0996	0.06588	F1	mg/Kg		66	70 - 130
Toluene	<0.00200	U	0.0996	0.08075		mg/Kg		81	70 - 130
Ethylbenzene	<0.00200	U	0.0996	0.09087		mg/Kg		91	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1902		mg/Kg		95	70 - 130
o-Xylene	<0.00200	U	0.0996	0.09879		mg/Kg		99	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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

Lab Sample ID: 890-2252-A-5-D MS
Matrix: Solid
Analysis Batch: 25055

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 25072

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: 890-2252-A-5-E MSD
Matrix: Solid
Analysis Batch: 25055

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 25072

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0994	0.07535		mg/Kg		76	70 - 130	13	35
Toluene	<0.00200	U	0.0994	0.09914		mg/Kg		100	70 - 130	20	35
Ethylbenzene	<0.00200	U	0.0994	0.1134		mg/Kg		114	70 - 130	22	35
m-Xylene & p-Xylene	<0.00401	U	0.199	0.2395		mg/Kg		120	70 - 130	23	35
o-Xylene	<0.00200	U	0.0994	0.1232		mg/Kg		124	70 - 130	22	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*

Lab Sample ID: MB 880-25078/5-A
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25078

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/09/22 11:34	05/10/22 11:39	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/09/22 11:34	05/10/22 11:39	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/09/22 11:34	05/10/22 11:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/09/22 11:34	05/10/22 11:39	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/09/22 11:34	05/10/22 11:39	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/09/22 11:34	05/10/22 11:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*05/09/22 11:34*	*05/10/22 11:39*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*05/09/22 11:34*	*05/10/22 11:39*	*1*

Lab Sample ID: MB 880-25242/5-A
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25242

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		05/10/22 10:17	05/10/22 22:34	1
Toluene	<0.00200	U	0.00200		mg/Kg		05/10/22 10:17	05/10/22 22:34	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		05/10/22 10:17	05/10/22 22:34	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		05/10/22 10:17	05/10/22 22:34	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		05/10/22 10:17	05/10/22 22:34	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		05/10/22 10:17	05/10/22 22:34	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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

Lab Sample ID: MB 880-25242/5-A
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 25242

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	05/10/22 10:17	05/10/22 22:34	1
1,4-Difluorobenzene (Surr)	91		70 - 130	05/10/22 10:17	05/10/22 22:34	1

Lab Sample ID: LCS 880-25242/1-A
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 25242

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09934		mg/Kg		99	70 - 130
Toluene	0.100	0.1085		mg/Kg		109	70 - 130
Ethylbenzene	0.100	0.1135		mg/Kg		114	70 - 130
m-Xylene & p-Xylene	0.200	0.2280		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1170		mg/Kg		117	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-25242/2-A
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 25242

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08092		mg/Kg		81	70 - 130	20	35
Toluene	0.100	0.09358		mg/Kg		94	70 - 130	15	35
Ethylbenzene	0.100	0.09993		mg/Kg		100	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.2043		mg/Kg		102	70 - 130	11	35
o-Xylene	0.100	0.1052		mg/Kg		105	70 - 130	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: 880-14479-A-6-D MS
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 25242

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U	0.0998	0.09344		mg/Kg		94	70 - 130
Toluene	<0.00202	U	0.0998	0.1023		mg/Kg		103	70 - 130
Ethylbenzene	<0.00202	U	0.0998	0.1059		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.200	0.2174		mg/Kg		109	70 - 130
o-Xylene	<0.00202	U	0.0998	0.1094		mg/Kg		110	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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

Lab Sample ID: 880-14479-A-6-E MSD
Matrix: Solid
Analysis Batch: 25225

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 25242

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0996	0.08899		mg/Kg		89	70 - 130	5	35
Toluene	<0.00202	U	0.0996	0.1075		mg/Kg		108	70 - 130	5	35
Ethylbenzene	<0.00202	U	0.0996	0.1151		mg/Kg		116	70 - 130	8	35
m-Xylene & p-Xylene	<0.00403	U	0.199	0.2406		mg/Kg		121	70 - 130	10	35
o-Xylene	<0.00202	U	0.0996	0.1216		mg/Kg		122	70 - 130	11	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

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

Lab Sample ID: MB 880-24911/1-A
Matrix: Solid
Analysis Batch: 24947

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 24911

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		05/05/22 14:19	05/06/22 20:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		05/05/22 14:19	05/06/22 20:46	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		05/05/22 14:19	05/06/22 20:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*05/05/22 14:19*	*05/06/22 20:46*	*1*
o-Terphenyl	*102*		*70 - 130*	*05/05/22 14:19*	*05/06/22 20:46*	*1*

Lab Sample ID: LCS 880-24911/2-A
Matrix: Solid
Analysis Batch: 24947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 24911

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1096		mg/Kg		110	70 - 130
Diesel Range Organics (Over C10-C28)	1000	901.0		mg/Kg		90	70 - 130

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

Lab Sample ID: LCSD 880-24911/3-A
Matrix: Solid
Analysis Batch: 24947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 24911

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1119		mg/Kg		112	70 - 130	2	20

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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

Lab Sample ID: LCSD 880-24911/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 24947 — **Prep Batch: 24911**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics (Over C10-C28)			1000	924.3		mg/Kg		92	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*111*		*70 - 130*
o-Terphenyl	*105*		*70 - 130*

Lab Sample ID: 890-2271-A-61-E MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 24947 — **Prep Batch: 24911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1195		mg/Kg		119	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	940.9		mg/Kg		92	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*104*		*70 - 130*
o-Terphenyl	*92*		*70 - 130*

Lab Sample ID: 890-2271-A-61-F MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 24947 — **Prep Batch: 24911**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1029		mg/Kg		103	70 - 130	15	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	813.9		mg/Kg		80	70 - 130	14	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*89*		*70 - 130*
o-Terphenyl	*78*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-24903/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 25042

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			05/08/22 13:23	1

Lab Sample ID: LCS 880-24903/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 25042

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			250	249.4		mg/Kg		100	90 - 110

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 880-24903/3-A
Matrix: Solid
Analysis Batch: 25042

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	243.6		mg/Kg		97	90 - 110	2	20

Lab Sample ID: 890-2271-A-51-B MS
Matrix: Solid
Analysis Batch: 25042

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	346		253	595.8		mg/Kg		99	90 - 110

Lab Sample ID: 890-2271-A-51-C MSD
Matrix: Solid
Analysis Batch: 25042

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	346		253	597.3		mg/Kg		100	90 - 110	0	20

Lab Sample ID: MB 880-25241/1-A
Matrix: Solid
Analysis Batch: 25278

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			05/10/22 16:07	1

Lab Sample ID: LCS 880-25241/2-A
Matrix: Solid
Analysis Batch: 25278

Client Sample ID: Lab Control Sample
Prep Type: Soluble

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

Lab Sample ID: LCSD 880-25241/3-A
Matrix: Solid
Analysis Batch: 25278

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	254.6		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 880-14580-A-1-B MS
Matrix: Solid
Analysis Batch: 25278

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	9500		5040	14730		mg/Kg		104	90 - 110

Lab Sample ID: 880-14580-A-1-C MSD
Matrix: Solid
Analysis Batch: 25278

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	9500		5040	14680		mg/Kg		103	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

GC VOA

Prep Batch: 24964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	5035	
890-2274-2	FS02	Total/NA	Solid	5035	
890-2274-3	FS03	Total/NA	Solid	5035	
890-2274-4	FS04	Total/NA	Solid	5035	
890-2274-5	FS05	Total/NA	Solid	5035	
MB 880-24964/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-24964/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-24964/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14398-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-14398-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 25052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8021B	24964
890-2274-2	FS02	Total/NA	Solid	8021B	24964
890-2274-3	FS03	Total/NA	Solid	8021B	24964
890-2274-4	FS04	Total/NA	Solid	8021B	24964
890-2274-5	FS05	Total/NA	Solid	8021B	24964
MB 880-24964/5-A	Method Blank	Total/NA	Solid	8021B	24964
LCS 880-24964/1-A	Lab Control Sample	Total/NA	Solid	8021B	24964
LCSD 880-24964/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	24964
880-14398-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	24964
880-14398-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	24964

Analysis Batch: 25055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-3	FS03	Total/NA	Solid	8021B	25072
MB 880-25055/8	Method Blank	Total/NA	Solid	8021B	
MB 880-25072/5-A	Method Blank	Total/NA	Solid	8021B	25072
LCS 880-25072/1-A	Lab Control Sample	Total/NA	Solid	8021B	25072
LCSD 880-25072/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25072
890-2252-A-5-D MS	Matrix Spike	Total/NA	Solid	8021B	25072
890-2252-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25072

Prep Batch: 25072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-3	FS03	Total/NA	Solid	5035	
MB 880-25072/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25072/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25072/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2252-A-5-D MS	Matrix Spike	Total/NA	Solid	5035	
890-2252-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 25078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-25078/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 25150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	Total BTEX	
890-2274-2	FS02	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

GC VOA (Continued)

Analysis Batch: 25150 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-3	FS03	Total/NA	Solid	Total BTEX	
890-2274-4	FS04	Total/NA	Solid	Total BTEX	
890-2274-5	FS05	Total/NA	Solid	Total BTEX	
890-2274-6	FS06	Total/NA	Solid	Total BTEX	

Analysis Batch: 25225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Total/NA	Solid	8021B	25242
MB 880-25078/5-A	Method Blank	Total/NA	Solid	8021B	25078
MB 880-25242/5-A	Method Blank	Total/NA	Solid	8021B	25242
LCS 880-25242/1-A	Lab Control Sample	Total/NA	Solid	8021B	25242
LCSD 880-25242/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25242
880-14479-A-6-D MS	Matrix Spike	Total/NA	Solid	8021B	25242
880-14479-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25242

Prep Batch: 25242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Total/NA	Solid	5035	
MB 880-25242/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25242/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25242/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14479-A-6-D MS	Matrix Spike	Total/NA	Solid	5035	
880-14479-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 24911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8015NM Prep	
890-2274-2	FS02	Total/NA	Solid	8015NM Prep	
890-2274-3	FS03	Total/NA	Solid	8015NM Prep	
890-2274-4	FS04	Total/NA	Solid	8015NM Prep	
890-2274-5	FS05	Total/NA	Solid	8015NM Prep	
890-2274-6	FS06	Total/NA	Solid	8015NM Prep	
MB 880-24911/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-24911/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-24911/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2271-A-61-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2271-A-61-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 24947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8015B NM	24911
890-2274-2	FS02	Total/NA	Solid	8015B NM	24911
890-2274-3	FS03	Total/NA	Solid	8015B NM	24911
890-2274-4	FS04	Total/NA	Solid	8015B NM	24911
MB 880-24911/1-A	Method Blank	Total/NA	Solid	8015B NM	24911
LCS 880-24911/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	24911
LCSD 880-24911/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	24911
890-2271-A-61-E MS	Matrix Spike	Total/NA	Solid	8015B NM	24911
890-2271-A-61-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	24911

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

GC Semi VOA

Analysis Batch: 24949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-5	FS05	Total/NA	Solid	8015B NM	24911
890-2274-6	FS06	Total/NA	Solid	8015B NM	24911

Analysis Batch: 25090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8015 NM	
890-2274-2	FS02	Total/NA	Solid	8015 NM	
890-2274-3	FS03	Total/NA	Solid	8015 NM	
890-2274-4	FS04	Total/NA	Solid	8015 NM	
890-2274-5	FS05	Total/NA	Solid	8015 NM	
890-2274-6	FS06	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 24903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Soluble	Solid	DI Leach	
890-2274-2	FS02	Soluble	Solid	DI Leach	
890-2274-3	FS03	Soluble	Solid	DI Leach	
890-2274-4	FS04	Soluble	Solid	DI Leach	
890-2274-5	FS05	Soluble	Solid	DI Leach	
MB 880-24903/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-24903/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-24903/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2271-A-51-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2271-A-51-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 25042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Soluble	Solid	300.0	24903
890-2274-2	FS02	Soluble	Solid	300.0	24903
890-2274-3	FS03	Soluble	Solid	300.0	24903
890-2274-4	FS04	Soluble	Solid	300.0	24903
890-2274-5	FS05	Soluble	Solid	300.0	24903
MB 880-24903/1-A	Method Blank	Soluble	Solid	300.0	24903
LCS 880-24903/2-A	Lab Control Sample	Soluble	Solid	300.0	24903
LCSD 880-24903/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	24903
890-2271-A-51-B MS	Matrix Spike	Soluble	Solid	300.0	24903
890-2271-A-51-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	24903

Leach Batch: 25241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Soluble	Solid	DI Leach	
MB 880-25241/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-25241/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-25241/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-14580-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-14580-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

HPLC/IC

Analysis Batch: 25278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Soluble	Solid	300.0	25241
MB 880-25241/1-A	Method Blank	Soluble	Solid	300.0	25241
LCS 880-25241/2-A	Lab Control Sample	Soluble	Solid	300.0	25241
LCSD 880-25241/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	25241
880-14580-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	25241
880-14580-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	25241

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS01

Date Collected: 05/03/22 11:00
Date Received: 05/03/22 16:45

Lab Sample ID: 890-2274-1

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	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 01:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24947	05/07/22 08:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:23	CH	XEN MID

Client Sample ID: FS02

Date Collected: 05/03/22 11:05
Date Received: 05/03/22 16:45

Lab Sample ID: 890-2274-2

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			5.00 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 02:17	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24947	05/07/22 02:19	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:32	CH	XEN MID

Client Sample ID: FS03

Date Collected: 05/03/22 11:10
Date Received: 05/03/22 16:45

Lab Sample ID: 890-2274-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 02:38	MR	XEN MID
Total/NA	Prep	5035			5.01 g	5 mL	25072	05/09/22 11:01	MR	XEN MID
Total/NA	Analysis	8021B		50			25055	05/10/22 02:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24947	05/07/22 08:29	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:41	CH	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Client Sample ID: FS04

Date Collected: 05/03/22 11:15
Date Received: 05/03/22 16:45

Lab Sample ID: 890-2274-4
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	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 02:58	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24947	05/07/22 08:49	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:50	CH	XEN MID

Client Sample ID: FS05

Date Collected: 05/03/22 11:10
Date Received: 05/03/22 16:45

Lab Sample ID: 890-2274-5
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			4.96 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 03:19	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24949	05/07/22 08:29	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:59	CH	XEN MID

Client Sample ID: FS06

Date Collected: 05/03/22 11:05
Date Received: 05/03/22 16:45

Lab Sample ID: 890-2274-6
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			5.00 g	5 mL	25242	05/10/22 10:17	MR	XEN MID
Total/NA	Analysis	8021B		200			25225	05/11/22 01:40	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24949	05/07/22 08:49	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	25241	05/10/22 10:17	SC	XEN MID
Soluble	Analysis	300.0		1			25278	05/10/22 17:54	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: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

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: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2274-1	FS01	Solid	05/03/22 11:00	05/03/22 16:45	0.5'
890-2274-2	FS02	Solid	05/03/22 11:05	05/03/22 16:45	0.5'
890-2274-3	FS03	Solid	05/03/22 11:10	05/03/22 16:45	0.5'
890-2274-4	FS04	Solid	05/03/22 11:15	05/03/22 16:45	0.5'
890-2274-5	FS05	Solid	05/03/22 11:10	05/03/22 16:45	0.5'
890-2274-6	FS06	Solid	05/03/22 11:05	05/03/22 16:45	0.5'

Chain of Custody

eurofins | Environment Testing Xenco

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	TALOMA MORRISSEY	Bill to: (if different)	ADRIAN BAKER
Company Name:	ENSOLUM LLC	Company Name:	XTO ENERGY
Address:	601 N. Marienfeld St. Suite 400	Address:	3104 E. GREEN ST
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Carlsbad, NM 88220
Phone:	337.257.8707	Email:	tmorrissey@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:	PLU 30 BIG SINKS CTB	Turn Around	
Project Number:	03E1558016	☒ Routine ☐ Rush	
Project Location:		Due Date:	
Sampler's Name:	Connor 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:	TWN-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.0	
Total Containers:		Corrected Temperature:	2.8	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chlorides	BTEX	TPH
FS01	S	05/07	1100	0.5'	C	1	x	x	x
FS02			1105						
FS03			1110						
FS04			1115						
FS05			1110						
FS06	↓	↓	1105	↓	↓	↓	↓	↓	↓

890-2274 Chain of Custody

Preservative Codes

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

Sample Comments

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Clae Clap	5.3.22 1645	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

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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:	TALOMA MORRISSEY	Bill to: (if different)	ADRIAN BAKER
Company Name:	ENSOLUM LLC	Company Name:	XTO ENERGY
Address:	601 N. Marienfeld St. Suite 400	Address:	3104 E GREEN ST
City, State ZIP:	Midland, TX 79701	City, State ZIP:	Carlsbad, NM 88220
Phone:	337.257.8307	Email:	tmorrissey@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:	PLU 30 BIG SINKS CTB	Turn Around	☒ Routine ☐ Rush
Project Number:	03E155 8016	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Short		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TWM_007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.0
Total Containers:		Corrected Temperature:	2.8

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: NaSO$_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Parameters: Chlorides	BTEX	TPH	Sample Comments
FS01	S	05/03	1100	0.5'	C	1	x	x	x	
FS02			1105							
FS03			1110							
FS04			1115							
FS05			1110							
FS06	↓	↓	1105	↓	↓	↓	↓	↓	↓	

890-2274 Chain of Custody

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	Cloe Cisneros	5.3.22 1645	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2274-1
SDG Number: 03E1558016

Login Number: 2274
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: 890-2274-1
SDG Number: 03E1558016

Login Number: 2274
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 05/05/22 11:31 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: Aimee Cole
To: Tacoma Morrissey
Subject: FW: XTO Site Activities for the week of April 21st
Date: Monday, May 2, 2022 12:23:00 PM
Attachments: image001.png
image002.png
image003.png
image004.png

Aimee Cole
Senior Managing Scientist
720-384-7365
Ensolum, LLC

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, April 29, 2022 10:00 AM
To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Chad.Hensley@state.nm.us
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Baker, Adrian <adrian.baker@exxonmobil.com>; Aimee Cole <acole@ensolum.com>
Subject: XTO Site Activities for the week of April 21st

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of May 2, 2022.

Monday
- PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

Tuesday
- PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

Wednesday
- ADU 624 / NAPP2123634554

Thursday
- ADU 624 / NAPP2123634554

Friday
- ADU 624 / NAPP2123634554

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From:	Hamlet, Robert, EMNRD
To:	Green, Garrett J
Cc:	Tacoma Morrissey; DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject:	RE: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379
Date:	Friday, April 29, 2022 9:31:38 AM

[**EXTERNAL EMAIL**]

Garrett,

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.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Thursday, April 28, 2022 4:39 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>
Subject: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379

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

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 30 Big Sinks CTB for three releases that occurred at the facility. Release dates are as follows (2/24/2022, 3/14/2022 and 3/19/2022), on Monday, May 2, 2022, at 10am MST. 24 hour release notifications were sent out on Friday, February 25, 2022 11:09 AM, Monday, March 14, 2022 3:05 PM and Saturday, March 19, 2022 12:47 PM since the releases were greater than 25 barrels in volume.

Please call us with any questions or concerns.

GPS Coordinates: (32.10395, -103.82149)

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Adrian Baker	Contact Telephone 432-236-3808
Contact email adrian.baker@exxonmobil.com	Incident # *(assigned by OCD)*
Contact mailing address 6401 Holiday Hill Rd Bldg 5, Midland, Texas, 79707	

Location of Release Source

Latitude 32.10407 Longitude -103.82134
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PLU 30 Big Sinks	Site Type CTB
Date Release Discovered 03/19/2022	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
F	30	25S	31E	Eddy

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

Nature and Volume of Release

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

☒ Crude Oil	Volume Released (bbls) 145.52	Volume Recovered (bbls) 144.00
☒ Produced Water	Volume Released (bbls) 97.01	Volume Recovered (bbls) 96.00
	Is the concentration of total dissolved solids (TDS) 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 diaphragm on the water dump of the separator failed, sending fluids to the skim tank. Fluids then released from bouncing betty and battery ESD into containment and misting pad. All free fluids were recovered. A third-party contractor has been retained for remediation purposes.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Garrett Green to Mike Bratcher; Victoria Venegas; Rob Hamlet; ocd.enviro@state.nm.us on Saturday, March 19, 2022 12:47 PM via email.

Initial Response

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

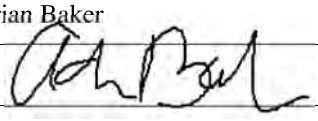
- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have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

If all the actions described above have not been undertaken, explain why:
NA

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: Adrian Baker Title: SSHE Coordinator

Signature:  Date: 4/1/2022

email: adrian.baker@exxonmobil.com Telephone: 432-236-3808

OCD Only

Received by: Date:

Location:	PLU 30 Big Sinks CTB	
Spill Date:	3/19/2022	

Area 1		
Approximate Area =	1347.50	cu.ft.
VOLUME OF LEAK		
Total Crude Oil =	144.00	bbls
Total Produced Water =	96.00	bbls
Area 2		
Approximate Area =	5696.00	sq. ft.
Average Saturation (or depth) of spill =	1.00	inches

Average Porosity Factor =	0.03	

VOLUME OF LEAK		
Total Crude Oil =	1.52	bbls
Total Produced Water =	1.01	bbls

TOTAL VOLUME OF LEAK		
Total Crude Oil =	**145.52**	**bbls**
Total Produced Water =	**97.01**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**144.00**	**bbls**
Total Produced Water =	**96.00**	**bbls**

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2209137379
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.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2209137379
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: Garrett Green Title: Environmental Coordinator

Signature:  Date: 3/6/2023

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2209137379
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Garrett Green Title: Environmental Coordinator

Signature:  Date: 3/6/2023

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

March 6, 2022

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

Re: Deferral Request Addendum
PLU 30 Big Sinks Battery
Incident Numbers NAPP2206853301, NAPP2208351954, & NAPP2209137379
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Deferral Request Addendum* (*Addendum*) to document assessment and remediation activities completed at the Poker Lake Unit (PLU) 30 Big Sinks Battery (Site). This *Addendum* details the additional remediation activities completed at the Site in response to the New Mexico Oil Conservation Division (NMOCD) denial of the original *Deferral Request*. In the denial, NMOCD indicated additional depth to water confirmation and excavation of accessible impacted soil was required. Based on the additional remediation activities described below, XTO is submitting this *Addendum* and requesting deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until the Site is reconstructed and/or the well pad is abandoned.

BACKGROUND

The Site is located in Unit F, Section 30, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.10395°, -103.82149°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

Incident Number NAPP2206853301

On February 24, 2022, a water dump washed out on a separator, causing the skim tank to overflow and release approximately 99.23 barrels (bbls) of crude oil into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 99 bbls of crude oil were recovered from within the lined containment. XTO reported the release to the NMOCD via email on February 25, 2022, and submitted a Release Notification Form C-141 (Form C-141) on March 9, 2022. The release was assigned Incident Number NAPP2206853301.

Incident Number NAPP2208351954

On March 14, 2022, a diaphragm failed on a 6-inch water dump, causing the skim tank to overflow and release approximately 64.2 bbls of crude oil and 16.05 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids;

approximately 64 bbls of crude oil and 16 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 14, 2022, and submitted a Form C-141 on March 24, 2022. The release was assigned Incident Number NAPP2208351954.

Incident Number NAPP2209137379

On March 19, 2022, a diaphragm on a water dump failed, causing the skim tank to overflow and release approximately 145.52 bbls of crude oil and 97.01 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 144 bbls of crude oil and 96 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 19, 2022, and submitted a Form C-141 on April 1, 2022. The release was assigned Incident Number NAPP2209137379.

A *Deferral Request* submitted on May 25, 2022 detailed Site characterization according to Table I, 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 Site characterization are presented on page 3 of the Form C-141, Site Assessment/Characterization. Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

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

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. A liner integrity inspection was conducted May 2, 2022. Upon inspection, the liner was determined to be competent. Photographic documentation was completed during the liner inspection and a photographic log is included in Appendix A. The release areas outside of containment overlapped for all three releases and were addressed concurrently.

Between April 2022 and May 2022, XTO conducted assessment, delineation, and excavation activities in response to the releases. An estimated 30 cubic yards of accessible impacted soil was excavated from the Site. To address residual petroleum hydrocarbon impacts left in place, a 5 percent (%) solution of Micro-Blaze® with freshwater was applied to the impacted area to promote natural attenuation of the hydrocarbons through biodegradation. Based on the remedial activities and laboratory analytical results from the soil sampling events, XTO submitted a *Deferral Request* on May 25, 2022, requesting to defer impacted soil immediately adjacent to and in between active production equipment until major facility reconstruction or abandonment.

On September 26, 2022, NMOCD denied the *Deferral Request* for Incident Number nAPP2209137379 for the following reasons:

- *The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against*

and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.

DEPTH TO WATER CONFIRMATION

In an effort to confirm the depth to groundwater beneath the Site, Ensolum personnel oversaw installation of a soil boring within 0.5 miles of the Site on June 22, 2022, utilizing a truck-mounted air rotary rig. The soil boring (C-4624) was permitted by the New Mexico Office of the State Engineer (NMOSE) and was advanced to a total depth of 120 feet below ground surface (bgs). An Ensolum geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The lithologic/soil sampling log is included in Appendix B. The location of the borehole is approximately 0.20 miles southeast of the Site and is depicted on Figure 1. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 100 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. Based on the confirmed depth to water greater than 100 feet bgs, the Table I Closure Criteria assigned in the original *Deferral Request* are applicable and appropriate for protection of groundwater at this Site.

ADDITIONAL EXCAVATION AND DELINEATION SOIL SAMPLING ACTIVITIES

Between October 19, 2022 and November 4, 2022, excavation activities were completed via hand shoveling to remove accessible impacted soil to the maximum extent practicable (MEP) as indicated by visible staining and field screening activities for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The excavation depth was limited to an approximate depth of 1-foot bgs due to refusal with hand shovels. The release area was not accessible with mechanical equipment due to the surrounding active production equipment preventing access to the area of the release extent.

Following removal of impacted soil to the MEP, Ensolum personnel collected 5-point composite soil samples at a frequency of 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. Composite soil samples FS01A through FS06A were collected from the floor of the excavation at a depth of 1-foot bgs. In addition, boreholes BH03 and BH04 were collected within the release extent, as close to the secondary containment as possible, on the south and east sides respectively, at a depth of 1.5 feet bgs to delineate the current depth of the affected soil.

Both composite excavation and discrete delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analyses of the following constituents of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

The excavation extent and excavation soil sample locations are depicted on Figure 2.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for excavation floor samples FS01A through FS06A, collected at 1-foot bgs, indicated TPH-GRO/TPH-DRO and TPH concentrations exceeded the Closure Criteria. Impacted soil was excavated to the MEP via hand shoveling. Due to the surrounding active production equipment, the

release area was not accessible with mechanical equipment, including a hydrovac, skid steer, and/or backhoe. Photographic documentation is included in Appendix A. Laboratory analytical results are summarized in Table 1 and the laboratory analytical reports are included in Appendix C.

Laboratory analytical results from delineation soil samples BH02 through BH04 indicate all COC concentrations were in compliance with the Closure Criteria and effectively confirm residual petroleum hydrocarbon impacts do not exceed 1.5 bgs.

The excavation measured approximately 1,200 square feet in areal extent. An additional 30 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at a permitted disposal facility in Carlsbad, New Mexico.

DEFFERAL REQUEST

A total of 60 cubic yards of impacted soil was excavated from the Site via hand shoveling to MEP, which terminated at a depth of 1-foot bgs due to refusal. Residual impacted petroleum hydrocarbon soil was left in place in the floor of the excavation due to the release area being surrounded by active production equipment where it could not be accessed with mechanical equipment and remediation would require a major facility deconstruction. Total TPH concentrations from confirmation samples collected in May 2022 to the October 2022 and December 2022 confirmation sampling events have reduced by an average of 62% with some areas decreasing more than 70%. Lighter end TPH in the GRO range have reduced by an average of 85% with some areas decreasing to 98%, indicating the gross impacts have been effectively removed from the Site through excavation and the application of a bio-amendment that supports natural attenuation, which is protective of human health and the environment.

Residual petroleum hydrocarbon-impacted soil remains in place within and around production equipment; however, the impacted soil is delineated vertically by delineation soil samples BH02/BH02A/BH03/BH04 and laterally by delineation soil samples from borehole BH01 and potholes PH01 through PH03. Approximately 30 cubic yards of petroleum hydrocarbon impacted soil remains in place assuming a maximum 1.5-foot depth based on the delineation soil samples listed above. The deferral area and delineation soil samples are depicted on Figure 3.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the Site. Based on the presence of active production equipment within and around the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until final reclamation of the well pad or major construction, whichever comes first.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC

Connor Whitman
Field Geologist

Daniel R. Moir, PG
Senior Managing Geologist

cc: Garrett Green, XTO
Shelby Pennington, XTO
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Excavation Soil Sample Locations
Figure 3	Deferral Map
Table 1	Soil Sample Analytical Results
Appendix A	Photographic Log
Appendix B	Lithologic / Soil Sampling Logs
Appendix C	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix D	NMOCD Notifications
Appendix E	Final C-141 Notification

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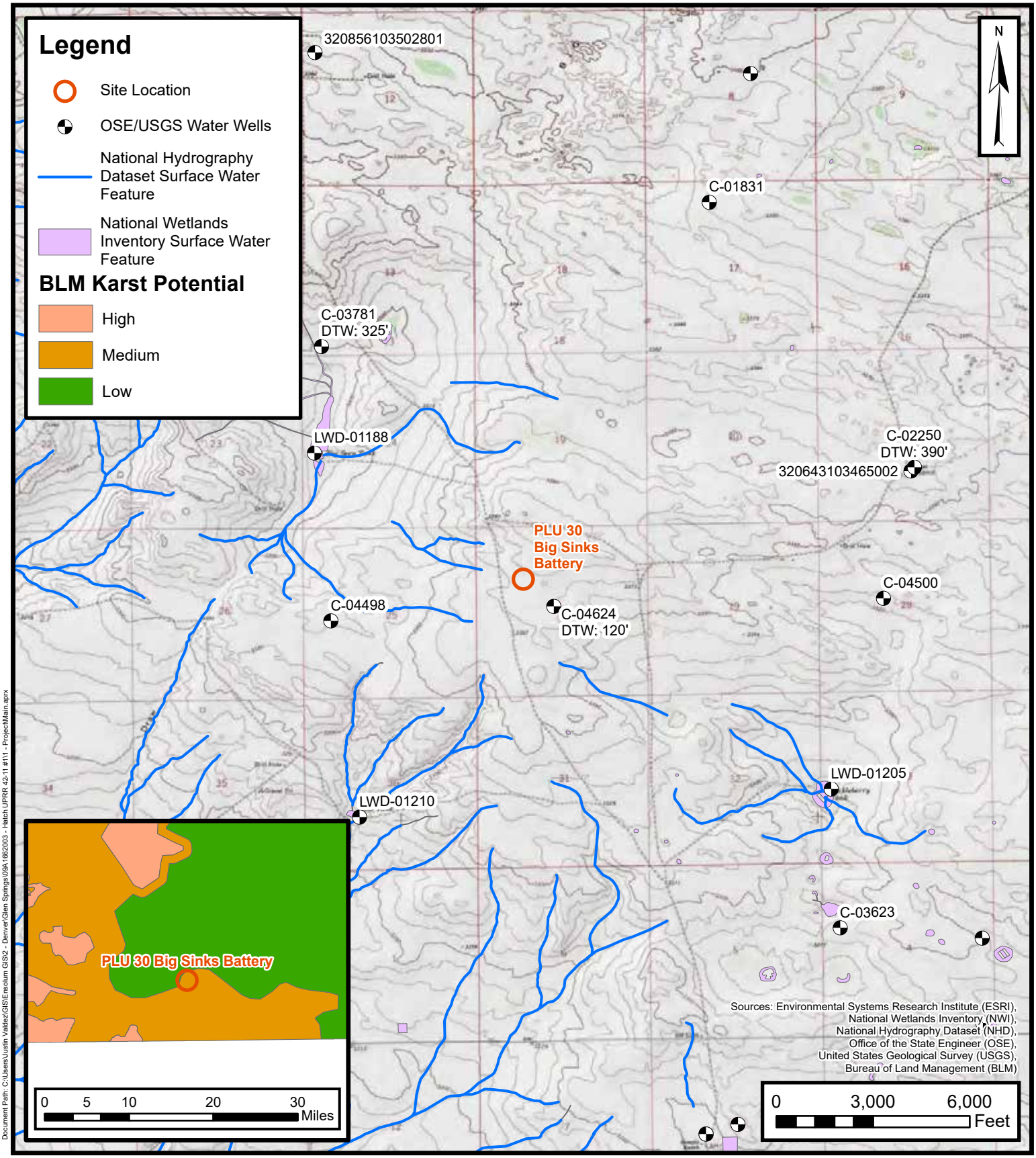
FIGURES



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\2 - Denver\Glen Springs\09A1662003 - Hatch UPRR 42-11 #1\1 - Project\Main.aprx

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

PLU 30 Big Sinks Battery
XTO Energy, Inc
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE

1

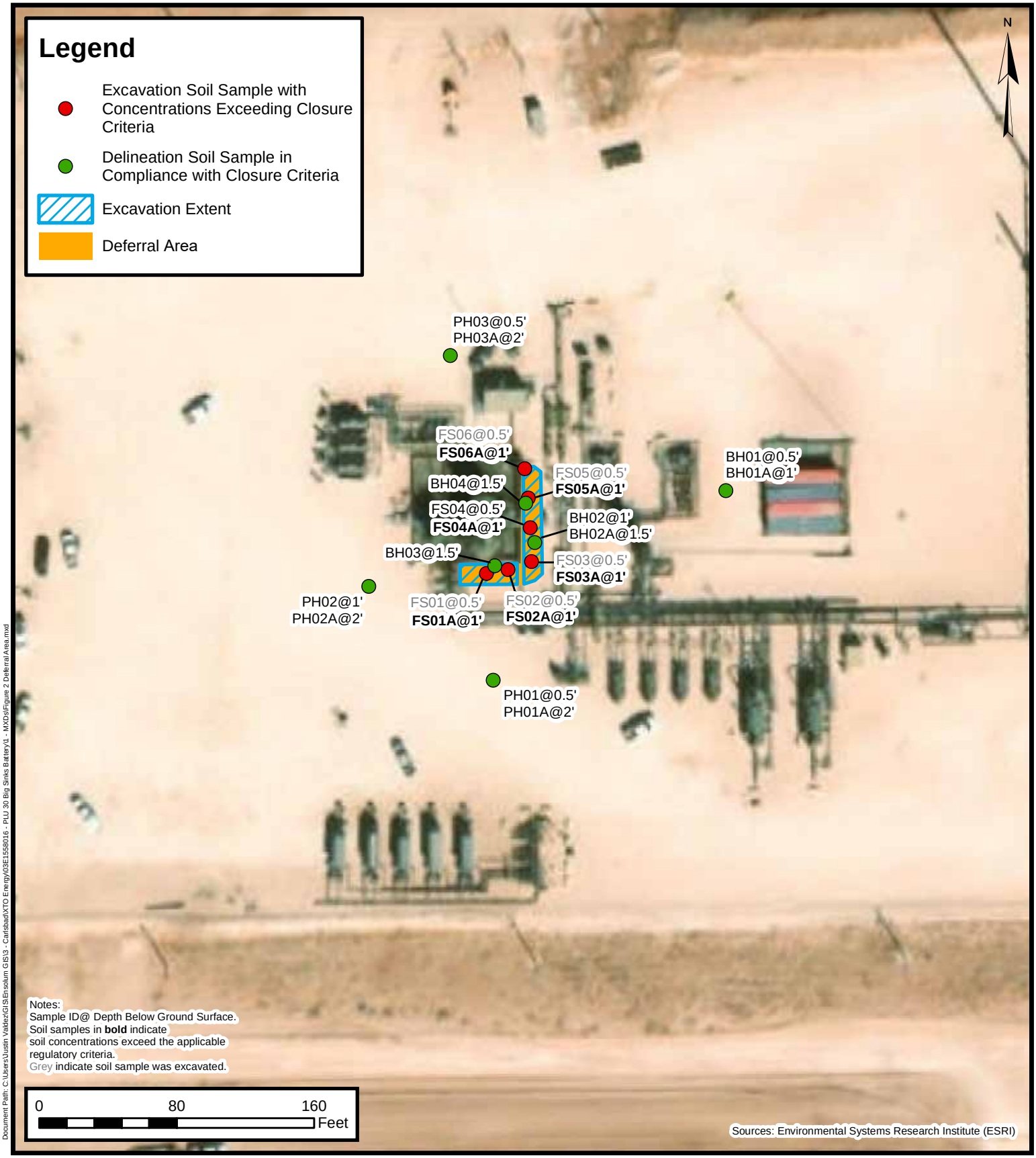
Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\3 - Carlsbad\XTO Energy\03E1558016 - PLU 30 Big Sinks Battery\1 - MXDs\Figure 1 Excavation Soil Sample Locations.mxd

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Excavation Soil Sample Locations

PLU 30 Big Sinks Battery
XTO Energy, Inc
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE
2



Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\3 - Carlsbad\XTO Energy\03E1558016 - PLU 30 Big Sinks Battery\1 - MXDs\Figure 2 Deferral Area.mxd

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Environmental, Engineering and Hydrogeologic Consultants

Deferral Area

PLU 30 Big Sinks Battery
XTO Energy, Inc
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE
3

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
PLU 30 BIG SINKS BATTERY
XTO ENERGY, INC
EDDY 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 I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Assessment Soil Samples										
~~SS01~~	~~04/15/2022~~	~~0.5~~	~~<0.0398~~	~~158~~	~~4,620~~	~~11,200~~	~~<250~~	~~**15,800**~~	~~**15,800**~~	~~103~~
~~SS02~~	~~04/15/2022~~	~~0.5~~	~~<0.0402~~	~~157~~	~~2,060~~	~~7,820~~	~~<49.9~~	~~**9,880**~~	~~**9,880**~~	~~448~~
Delineation Soil Samples										
BH01	05/02/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
BH01A	05/02/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	14.6
BH02	05/02/2022	1	<0.00200	<0.00399	<49.9	428	60.9	428	489	26.2
BH02	05/02/2022	1.5	<0.00199	<0.00398	<50.0	110	<50.0	110	110	15.4
BH03	10/19/2022	1.5	<0.00199	<0.00398	<49.9	216	124	216	340	263
BH04	10/19/2022	1.5	<0.00200	<0.00399	63.3	377	263	440	703	201
PH01	05/02/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	85.9
PH01A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	17.0
PH02	05/02/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	76.4
PH02A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	52.1
PH03	05/02/2022	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	36.9
PH03A	05/02/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	36.3
Confirmation Soil Samples										
~~FS01~~	~~05/03/2022~~	~~0.5'~~	~~<0.00201~~	~~0.299~~	~~1,290~~	~~10,400~~	~~1,640~~	~~**11,700**~~	~~**13,300**~~	~~394~~
FS01A	10/19/2022	1'	<0.00201	0.0449	244	5,310	3,130	**5,550**	**8,680**	224
~~FS02~~	~~05/03/2022~~	~~0.5'~~	~~<0.00200~~	~~0.844~~	~~1,180~~	~~7,810~~	~~1,380~~	~~**8,990**~~	~~**10,400**~~	~~141~~
FS02A	10/19/2022	1'	<0.00199	0.0327	204	3,150	1,730	**3,350**	**5,080**	80.0
~~FS03~~	~~05/03/2022~~	~~0.5'~~	~~<0.00199~~	~~45.1~~	~~2,140~~	~~11,500~~	~~1,880~~	~~**13,600**~~	~~**15,500**~~	~~723~~
FS03A	10/24/2022	1'	<0.00200	0.0639	321	5,750	<49.8	**6,070**	**6,070**	62.2
~~FS04~~	~~05/03/2022~~	~~0.5'~~	~~<0.00200~~	~~1.09~~	~~2,220~~	~~14,200~~	~~2,330~~	~~**16,400**~~	~~**18,800**~~	~~790~~
FS04A	10/24/2022	1'	<0.00199	0.237	<50.0	4,540	488	**4,540**	**5,030**	107
~~FS05~~	~~05/03/2022~~	~~0.5'~~	~~0.00362~~	~~1.35~~	~~496~~	~~12,400~~	~~<250~~	~~**12,900**~~	~~**12,900**~~	~~528~~
FS05A	12/01/2022	1'	<0.00200	0.0153	84.4	4000	<50.0	**4,084**	**4,084**	39.9
~~FS06~~	~~05/03/2022~~	~~0.5'~~	~~<0.400~~	~~0.177~~	~~617~~	~~16,000~~	~~<250~~	~~**16,600**~~	~~**16,600**~~	~~106~~
FS06A	12/01/2022	1'	<0.00199	0.0288	107	3740	<50.0	**3,847**	**3,847**	18.6

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 I Closure Criteria or reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

~~Grey~~ text indicates soil sample removed during excavation activities

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APPENDIX A

Photographic Log

Photo Log

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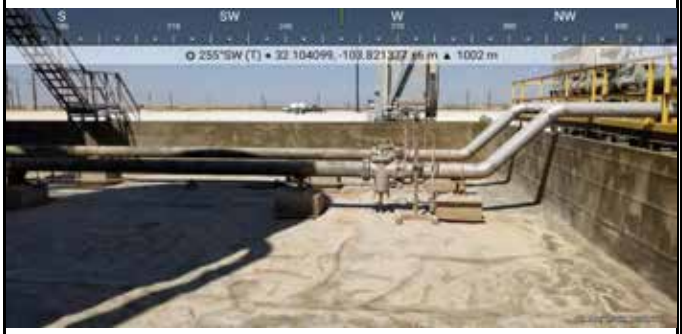
Photographic Log
XTO Energy, Inc.
PLU 30 Big Sinks Battery
Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379

Photograph 1 Date: Apr 15, 2022
Description: View of release extent and visible staining facing north.

Photograph 2 Date: Apr 15, 2022
Description: View of release extent and visible staining facing south.

Photograph 3 Date: May 2, 2022
Description: View of containment during liner inspection, facing south.



Photograph 4 Date: May 2, 2022
Description: View of containment during liner inspection, facing west.

Photo Log

Photographic Log

XTO Energy, Inc.

PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379

Photograph 5 Date: 4/15/2022

Description: View of hand shoveled excavation extent facing north.

Photograph 6 Date: 4/15/2022

Description: View of hand shoveled excavation extent facing south.

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Photographic Log
XTO Energy, Inc
PLU 30 Big Sinks Battery
nAPP2209137379, nAPP2208351954, nAPP2206853301

Photograph 7 Date: 11/04/2022
Description: Limited access to release area.
View: Looking north.

Photograph 8 Date: 11/04/2022
Description: Elevated view, east section of release.
View: Looking northwest.

Photograph 9 Date: 10/24/2022
Description: Hand excavation of staining.
View: Looking southeast.

Photograph 10 Date: 10/24/2022
Description: Hand excavation of staining.
View: Looking northeast.

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APPENDIX B

Lithologic Soil Sampling Logs

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
C-4624 POD 1		C-4624

WELL OWNER NAME(S)	PHONE (OPTIONAL)
XTO ENERGY INC	432-236-3808

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6401 HOLIDAY HILL ROAD	MIDLAND	TX	79707

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	6	5.66	N
	LONGITUDE	-103	49	5.79	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

ON POKER LAKE UNIT 30 BS # 103H PAD

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1184	RUSSELL SOUTHERLAND	WEST TEXAS WATER WELL SERVICE

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
06/22/22	06/22/22	120		

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
			NO CASING IN HOLE				

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
			N/A		

OSE DIT JUL 25 2022 PM 1:54

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO. C-4624-POD1	POD NO. POD1	TRN NO. 726169	
LOCATION 25S.31E.30.4.4.1		WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	17		CALACHIE	Y ✓ N	
17	30		SAND	Y ✓ N	
30	40		SAND, SMALL GRAVEL	Y ✓ N	
40	95		SAND	Y ✓ N	
95	120		SANDSTONE, SAND	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☑ OTHER – SPECIFY: DRY HOLE

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: THE BORING WILL BE SECURED AND LEFT OPEN FOR 72 HOURS AT WHICH TIME, XTO WILL ASSESS FOR THE PRESENCE OR ABSENCE OF GROUNDWATER. XTO WILL BACKFILL THE BORING FOLLOWING NMOSE ABANDONMENT PROCEDUCES FOR SOIL BORING.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

RUSSELL SOUTHERLAND

6. SIGNATURE

BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.

Russell Southerland — RUSSELL SOUTHERLAND Russell Southerland — 06/22/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 04/30/2019)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

ENSOLUM

	Sample Name: BH02	Date: 05/02/2022
	Site Name: PLU 30 Big Sinks Battery	
	Incident Number: NAPP2206853301, NAPP2208351954, NAPP2209137379	
	Job Number: 03E1558016	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: CS	Method: hand auger
Coordinates: 32.103984°, -103.821327°	Hole Diameter: 4"	Total Depth: 1'

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. A 40% correction factor is included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	212.8	3,863	Y	SS02	0.5	0.5	CCHE	caliche
D	<168	101.2	Y	BH02	1	1	CCHE	caliche
D	<168	40.2	N	BH02	1.5	1.5	CCHE	caliche
								TD @ 1 foot bgs, auger refusal

ENSOLUM

	Sample Name: BH03	Date: 10/19/2022
	Site Name: PLU 30 Big Sinks Battery	
	Incident Number: nAPP2209137379, nAPP2208351954, nAPP2206853301	
	Job Number: 03E1558016	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Connor Whitman	Method: Hand Auger
Coordinates:	Hole Diameter: 4"	Total Depth: 1' bgs

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		
Dry	201.6	8.4	N	BH03	1'	1	CCHE	CALICHE, Pad material.
								Total depth at 1' bgs.

ENSOLUM

	Sample Name: BH04	Date: 10/19/2022
	Site Name: PLU 30 Big Sinks Battery	
	Incident Number: nAPP2209137379, nAPP2208351954, nAPP2206853301	
	Job Number: 03E1558016	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Connor Whitman	Method: Hand Auger
Coordinates:	Hole Diameter: 4"	Total Depth: 1' bgs

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		
Dry	<168	36.7	N	BH02	1'	1	SP	SAND, dark brown, fine, with caliche.
								Total depth at 1' bgs.

ENSOLUM

APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/30/2022 12:04:17 PM Revision 2

JOB DESCRIPTION

PLU 30 Big Sinks Battery
SDG NUMBER 03E1558016

JOB NUMBER

890-3250-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization

Generated
12/30/2022 12:04:17 PM
Revision 2

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

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Job ID: 890-3250-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3250-1

REVISION

The report being provided is a revision of the original report sent on 10/25/2022. The report (revision 2) is being revised due to Per client email, requesting sample depth to be changed.

Report revision history

The report being provided is a revision of the original report sent on 10/25/2022. The report (revision 2) is being revised due to Per client email, requesting sample depth to be changed.
Revision 1 - 11/29/2022 - Reason - Per client email, requesting sample ID change.

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

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: BH04 (890-3250-1).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: BH04 (890-3250-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

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

HPLC/IC
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: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Client Sample ID: BH04

Date Collected: 10/19/22 12:20
Date Received: 10/20/22 09:38
Sample Depth: 1.5'

Lab Sample ID: 890-3250-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:15	10/24/22 15:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:15	10/24/22 15:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:15	10/24/22 15:23	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/21/22 14:15	10/24/22 15:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/21/22 14:15	10/24/22 15:23	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/21/22 14:15	10/24/22 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*	*10/21/22 14:15*	*10/24/22 15:23*	*1*
1,4-Difluorobenzene (Surr)	*58*	*S1-*	*70 - 130*	*10/21/22 14:15*	*10/24/22 15:23*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			10/24/22 16:38	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**703**		49.9		mg/Kg			10/24/22 09:48	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**63.3**		49.9		mg/Kg		10/21/22 13:50	10/22/22 01:41	1
Diesel Range Organics (Over C10-C28)	**377**		49.9		mg/Kg		10/21/22 13:50	10/22/22 01:41	1
Oil Range Organics (Over C28-C36)	**263**		49.9		mg/Kg		10/21/22 13:50	10/22/22 01:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*10/21/22 13:50*	*10/22/22 01:41*	*1*
o-Terphenyl	*87*		*70 - 130*	*10/21/22 13:50*	*10/22/22 01:41*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**201**		4.98		mg/Kg			10/24/22 18:40	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

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)
890-3250-1	BH04	80	58 S1-
890-3253-A-1-A MS	Matrix Spike	100	95
890-3253-A-1-B MSD	Matrix Spike Duplicate	97	72
LCS 880-37514/1-A	Lab Control Sample	96	89
LCSD 880-37514/2-A	Lab Control Sample Dup	95	81
MB 880-37514/5-A	Method Blank	107	77

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3240-A-2-C MS	Matrix Spike	82	84
890-3240-A-2-D MSD	Matrix Spike Duplicate	79	81
890-3250-1	BH04	79	87
LCS 880-37503/2-A	Lab Control Sample	90	100
LCSD 880-37503/3-A	Lab Control Sample Dup	99	110
MB 880-37503/1-A	Method Blank	118	133 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37514/5-A
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37514

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*10/21/22 14:15*	*10/24/22 10:42*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*10/21/22 14:15*	*10/24/22 10:42*	*1*

Lab Sample ID: LCS 880-37514/1-A
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1046		mg/Kg		105	70 - 130
Toluene	0.100	0.1066		mg/Kg		107	70 - 130
Ethylbenzene	0.100	0.09931		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	0.200	0.2054		mg/Kg		103	70 - 130
o-Xylene	0.100	0.1034		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 880-37514/2-A
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09576		mg/Kg		96	70 - 130	9	35
Toluene	0.100	0.09860		mg/Kg		99	70 - 130	8	35
Ethylbenzene	0.100	0.1009		mg/Kg		101	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1953		mg/Kg		98	70 - 130	5	35
o-Xylene	0.100	0.09779		mg/Kg		98	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*

Lab Sample ID: 890-3253-A-1-A MS
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.100	0.1004		mg/Kg		99	70 - 130
Toluene	<0.00201	U	0.100	0.1142		mg/Kg		114	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

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

Lab Sample ID: 890-3253-A-1-A MS
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.100	0.09592		mg/Kg		96	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	<0.00201	U	0.100	0.1000		mg/Kg		100	70 - 130

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

Lab Sample ID: 890-3253-A-1-B MSD
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0996	0.09485		mg/Kg		94	70 - 130	6	35
Toluene	<0.00201	U	0.0996	0.09849		mg/Kg		99	70 - 130	15	35
Ethylbenzene	<0.00201	U	0.0996	0.09498		mg/Kg		95	70 - 130	1	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1982		mg/Kg		100	70 - 130	1	35
o-Xylene	<0.00201	U	0.0996	0.1021		mg/Kg		103	70 - 130	2	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*72*		*70 - 130*

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

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

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1

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

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

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

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

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

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

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

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

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

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

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

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

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

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

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

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

Lab Sample ID: 890-3240-A-2-D MSD
Matrix: Solid
Analysis Batch: 37444

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	1014		mg/Kg		102	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	762.1		mg/Kg		74	70 - 130	3	20

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37513/1-A
Matrix: Solid
Analysis Batch: 37653

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/24/22 16:26	1

Lab Sample ID: LCS 880-37513/2-A
Matrix: Solid
Analysis Batch: 37653

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	252.2		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-37513/3-A
Matrix: Solid
Analysis Batch: 37653

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	254.8		mg/Kg		102	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

GC VOA

Prep Batch: 37514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	5035	
MB 880-37514/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8021B	37514
MB 880-37514/5-A	Method Blank	Total/NA	Solid	8021B	37514
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	8021B	37514
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37514
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	37514
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37514

Analysis Batch: 37726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37503
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37503

Prep Batch: 37503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8015NM Prep	
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 37513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Soluble	Solid	DI Leach	
MB 880-37513/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37513/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37513/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

HPLC/IC

Analysis Batch: 37653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Soluble	Solid	300.0	37513
MB 880-37513/1-A	Method Blank	Soluble	Solid	300.0	37513
LCS 880-37513/2-A	Lab Control Sample	Soluble	Solid	300.0	37513
LCSD 880-37513/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37513

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Client Sample ID: BH04

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

Lab Sample ID: 890-3250-1

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	37514	10/21/22 14:15	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37615	10/24/22 15:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37726	10/24/22 16:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			37631	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/22/22 01:41	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	37513	10/21/22 18:00	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37653	10/24/22 18:40	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Laboratory: Eurofins Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
N/A	N/A	None on record.	

Method Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3250-1	BH04	Solid	10/19/22 12:20	10/20/22 09:38	1.5'

Chain of Custody

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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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.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:	PLU 30 Big Sinks Battery	Turn Around	☒ Routine ☐ Rush
Project Number:	03E1558016	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT

Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TMH007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.0
Total Containers:		Corrected Temperature:	2.8

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
BH02	S	10/19/22	1220	1'	G	1		✓	✓	✓

Parameters

890-3250 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID:
nAPP2209137378 nAPP2208351954 nAPP2208653301
Cost Center:
2037891001
AFE:

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			10.20.22 9:35			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3250-1
SDG Number: 03E1558016

Login Number: 3250
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3250-1
SDG Number: 03E1558016

Login Number: 3250
List Number: 2
Creator: Rodriguez, Leticia

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

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/12/2022 3:32:51 PM

JOB DESCRIPTION

PLU 30 Big Sinks
SDG NUMBER 03E1558016

JOB NUMBER

880-22192-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Eurofins Midland

Job Notes

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

Authorization

Generated
12/12/2022 3:32:51 PM

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

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Laboratory Job ID: 880-22192-1
SDG: 03E1558016

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 880-22192-1
Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
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: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Job ID: 880-22192-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-22192-1

Receipt
The samples were received on 12/1/2022 2:38 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

GC VOA
Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-22119-A-24-B MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-22110-A-1-D) and (880-22110-A-1-E MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: FS06A (880-22192-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

HPLC/IC
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: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Client Sample ID: FS05A

Date Collected: 12/01/22 13:05
Date Received: 12/01/22 14:38
Sample Depth: 1'

Lab Sample ID: 880-22192-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/02/22 10:31	12/10/22 04:48	1
m-Xylene & p-Xylene	**0.0100**		0.00399		mg/Kg		12/02/22 10:31	12/10/22 04:48	1
o-Xylene	**0.00532**		0.00200		mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Xylenes, Total	**0.0153**		0.00399		mg/Kg		12/02/22 10:31	12/10/22 04:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*12/02/22 10:31*	*12/10/22 04:48*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*12/02/22 10:31*	*12/10/22 04:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0153**		0.00399		mg/Kg			12/12/22 15:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**4080**		50.0		mg/Kg			12/07/22 09:45	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**84.4**		50.0		mg/Kg		12/05/22 11:32	12/06/22 13:42	1
Diesel Range Organics (Over C10-C28)	**4000**		50.0		mg/Kg		12/05/22 11:32	12/06/22 13:42	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/05/22 11:32	12/06/22 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*114*		*70 - 130*	*12/05/22 11:32*	*12/06/22 13:42*	*1*
o-Terphenyl	*114*		*70 - 130*	*12/05/22 11:32*	*12/06/22 13:42*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39.9**		5.01		mg/Kg			12/08/22 08:53	1

Client Sample ID: FS06A

Date Collected: 12/01/22 13:10
Date Received: 12/01/22 14:38
Sample Depth: 1'

Lab Sample ID: 880-22192-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Toluene	<0.00199	U	0.00199		mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		12/02/22 10:31	12/10/22 05:09	1
m-Xylene & p-Xylene	**0.0195**		0.00398		mg/Kg		12/02/22 10:31	12/10/22 05:09	1
o-Xylene	**0.00925**		0.00199		mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Xylenes, Total	**0.0288**		0.00398		mg/Kg		12/02/22 10:31	12/10/22 05:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*12/02/22 10:31*	*12/10/22 05:09*	*1*

Eurofins Midland

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Client Sample ID: FS06A
Date Collected: 12/01/22 13:10
Date Received: 12/01/22 14:38
Sample Depth: 1'

Lab Sample ID: 880-22192-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*12/02/22 10:31*	*12/10/22 05:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0288**		0.00398	mg/Kg			12/12/22 15:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**3850**		50.0	mg/Kg			12/07/22 09:45	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**107**		50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	1
Diesel Range Organics (Over C10-C28)	**3740**		50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*12/05/22 11:32*	*12/06/22 14:03*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*12/05/22 11:32*	*12/06/22 14:03*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18.6**		5.02	mg/Kg			12/08/22 08:59	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-22119-A-24-A MS	Matrix Spike	84	94
880-22119-A-24-B MSD	Matrix Spike Duplicate	79	98
880-22192-1	FS05A	116	94
880-22192-2	FS06A	106	97
LCS 880-40826/1-A	Lab Control Sample	99	101
LCSD 880-40826/2-A	Lab Control Sample Dup	106	104
MB 880-40826/5-A	Method Blank	77	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-22110-A-1-E MS	Matrix Spike	142 S1+	112
880-22110-A-1-F MSD	Matrix Spike Duplicate	120	99
880-22192-1	FS05A	114	114
880-22192-2	FS06A	137 S1+	133 S1+
LCS 880-41024/2-A	Lab Control Sample	129	120
LCSD 880-41024/3-A	Lab Control Sample Dup	129	117
MB 880-41024/1-A	Method Blank	130	127

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-40826/5-A
Matrix: Solid
Analysis Batch: 41499

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 40826

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/01/22 16:02	12/09/22 20:43	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/01/22 16:02	12/09/22 20:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/01/22 16:02	12/09/22 20:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/01/22 16:02	12/09/22 20:43	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/01/22 16:02	12/09/22 20:43	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/01/22 16:02	12/09/22 20:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*	*12/01/22 16:02*	*12/09/22 20:43*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*12/01/22 16:02*	*12/09/22 20:43*	*1*

Lab Sample ID: LCS 880-40826/1-A
Matrix: Solid
Analysis Batch: 41499

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 40826

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1015		mg/Kg		102	70 - 130		
Toluene			0.100	0.08806		mg/Kg		88	70 - 130		
Ethylbenzene			0.100	0.09021		mg/Kg		90	70 - 130		
m-Xylene & p-Xylene			0.200	0.1860		mg/Kg		93	70 - 130		
o-Xylene			0.100	0.08888		mg/Kg		89	70 - 130		

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

Lab Sample ID: LCSD 880-40826/2-A
Matrix: Solid
Analysis Batch: 41499

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 40826

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08696		mg/Kg		87	70 - 130	15	35
Toluene			0.100	0.07710		mg/Kg		77	70 - 130	13	35
Ethylbenzene			0.100	0.07744		mg/Kg		77	70 - 130	15	35
m-Xylene & p-Xylene			0.200	0.1595		mg/Kg		80	70 - 130	15	35
o-Xylene			0.100	0.07872		mg/Kg		79	70 - 130	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

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

Lab Sample ID: MB 880-41024/1-A
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 41024

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		12/05/22 11:32	12/06/22 08:55	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/05/22 11:32	12/06/22 08:55	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/05/22 11:32	12/06/22 08:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*130*		*70 - 130*	*12/05/22 11:32*	*12/06/22 08:55*	*1*
o-Terphenyl	*127*		*70 - 130*	*12/05/22 11:32*	*12/06/22 08:55*	*1*

Lab Sample ID: LCS 880-41024/2-A
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 41024

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	840.2		mg/Kg		84	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	897.2		mg/Kg		90	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*129*		*70 - 130*
o-Terphenyl	*120*		*70 - 130*

Lab Sample ID: LCSD 880-41024/3-A
Matrix: Solid
Analysis Batch: 41104

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 41024

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	836.2		mg/Kg		84	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	886.7		mg/Kg		89	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*129*		*70 - 130*
o-Terphenyl	*117*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-40959/1-A
Matrix: Solid
Analysis Batch: 41085

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			12/07/22 22:10	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-40959/2-A
Matrix: Solid
Analysis Batch: 41085

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	267.0		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-40959/3-A
Matrix: Solid
Analysis Batch: 41085

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

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

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

GC VOA

Prep Batch: 40826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	5035	
880-22192-2	FS06A	Total/NA	Solid	5035	
MB 880-40826/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40826/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40826/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 41499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8021B	40826
880-22192-2	FS06A	Total/NA	Solid	8021B	40826
MB 880-40826/5-A	Method Blank	Total/NA	Solid	8021B	40826
LCS 880-40826/1-A	Lab Control Sample	Total/NA	Solid	8021B	40826
LCSD 880-40826/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	40826

Analysis Batch: 41666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	Total BTEX	
880-22192-2	FS06A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 41024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8015NM Prep	
880-22192-2	FS06A	Total/NA	Solid	8015NM Prep	
MB 880-41024/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41024/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 41104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8015B NM	41024
880-22192-2	FS06A	Total/NA	Solid	8015B NM	41024
MB 880-41024/1-A	Method Blank	Total/NA	Solid	8015B NM	41024
LCS 880-41024/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41024
LCSD 880-41024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41024

Analysis Batch: 41228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8015 NM	
880-22192-2	FS06A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 40959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Soluble	Solid	DI Leach	
880-22192-2	FS06A	Soluble	Solid	DI Leach	
MB 880-40959/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-40959/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-40959/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

HPLC/IC

Analysis Batch: 41085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Soluble	Solid	300.0	40959
880-22192-2	FS06A	Soluble	Solid	300.0	40959
MB 880-40959/1-A	Method Blank	Soluble	Solid	300.0	40959
LCS 880-40959/2-A	Lab Control Sample	Soluble	Solid	300.0	40959
LCSD 880-40959/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	40959

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Client Sample ID: FS05A

Date Collected: 12/01/22 13:05
Date Received: 12/01/22 14:38

Lab Sample ID: 880-22192-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			40826	MNR	EET MID	12/02/22 10:31
Total/NA	Analysis	8021B		1	41499	MNR	EET MID	12/10/22 04:48
Total/NA	Analysis	Total BTEX		1	41666	SM	EET MID	12/12/22 15:45
Total/NA	Analysis	8015 NM		1	41228	SM	EET MID	12/07/22 09:45
Total/NA	Prep	8015NM Prep			41024	DM	EET MID	12/05/22 11:32
Total/NA	Analysis	8015B NM		1	41104	SM	EET MID	12/06/22 13:42
Soluble	Leach	DI Leach			40959	SMC	EET MID	12/03/22 13:50
Soluble	Analysis	300.0		1	41085	CH	EET MID	12/08/22 08:53

Client Sample ID: FS06A

Date Collected: 12/01/22 13:10
Date Received: 12/01/22 14:38

Lab Sample ID: 880-22192-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			40826	MNR	EET MID	12/02/22 10:31
Total/NA	Analysis	8021B		1	41499	MNR	EET MID	12/10/22 05:09
Total/NA	Analysis	Total BTEX		1	41666	SM	EET MID	12/12/22 15:45
Total/NA	Analysis	8015 NM		1	41228	SM	EET MID	12/07/22 09:45
Total/NA	Prep	8015NM Prep			41024	DM	EET MID	12/05/22 11:32
Total/NA	Analysis	8015B NM		1	41104	SM	EET MID	12/06/22 14:03
Soluble	Leach	DI Leach			40959	SMC	EET MID	12/03/22 13:50
Soluble	Analysis	300.0		1	41085	CH	EET MID	12/08/22 08:59

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

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: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

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

Protocol References:

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-22192-1	FS05A	Solid	12/01/22 13:05	12/01/22 14:38	1'
880-22192-2	FS06A	Solid	12/01/22 13:10	12/01/22 14:38	1'

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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: 22192

www.xenco.com Page 1 of 1

Project Manager	Thomas Morrissey	Bill to: (if different)	Garrett Green
Company Name	Ensolum	Company Name	WPX Energy
Address	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP	Carlsbad, NM 88220	City, State ZIP	Carlsbad, NM 88220
Phone	303-887-2946	Email	Garrett.Green@ExxonMobil.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:	PLU 30 Big Sinks	Turn Around	
Project Number	03E1558016	☑ Routine ☐ Rush	
Project Location	32.1040, -103.8213	Due Date.	
Sampler's Name:	Kasse 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	T-NM-007	
Cooler Custody Seals.	Yes No N/A	Correction Factor		
Sample Custody Seals.	Yes No N/A	Temperature Reading:	12.1	
Total Containers.		Corrected Temperature		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	BTEX	TPH	Chlorides	Sample Comments
FS05A	S	12/1/22	1305	1'	Comp	1		X	X	X	Incident number:
FS06A	S	12/1/22	1310	1'	Comp	1		X	X	X	NAPP2209137379
											CC:
											203799/001
											tmorrissey@ensolum.com

Parameters: BTEX, TPH, Chlorides

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

880-22192 Chain of Custody

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg 1631 / 245 1 / 7470 / 7471

Relinquished by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time
1		12/1/22 14:38	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 880-22192-1
SDG Number: 03E1558016

Login Number: 22192
List Number: 1
Creator: Kramer, Jessica

List Source: Eurofins Midland

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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/30/2022 12:00:36 PM Revision 2

JOB DESCRIPTION

PLU 30 Big Sinks Battery
SDG NUMBER 03E1558016

JOB NUMBER

890-3243-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization

Generated
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Revision 2

Authorized for release by
Jessica Kramer, Project Manager
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Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Laboratory Job ID: 890-3243-1
SDG: 03E1558016

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Job ID: 890-3243-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3243-1

REVISION

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 2) is being revised due to Per client email, requesting sample ID and depth change.

Report revision history

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 2) is being revised due to Per client email, requesting sample ID and depth change.
Revision 1 - 11/29/2022 - Reason - Per client email, requesting sample ID change.

Receipt
The sample was received on 10/20/2022 9:38 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: BH03 (890-3243-1).

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

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

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

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37511 and analytical batch 880-37598 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Client Sample ID: BH03

Date Collected: 10/19/22 10:40
Date Received: 10/20/22 09:38
Sample Depth: 1.5'

Lab Sample ID: 890-3243-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 03:17	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 03:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*10/26/22 14:13*	*10/29/22 03:17*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*10/26/22 14:13*	*10/29/22 03:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/30/22 21:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**340**		49.9	mg/Kg			10/24/22 09:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	1
Diesel Range Organics (Over C10-C28)	**216**		49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	1
Oil Range Organics (Over C28-C36)	**124**		49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*10/21/22 13:00*	*10/21/22 19:08*	*1*
o-Terphenyl	*95*		*70 - 130*	*10/21/22 13:00*	*10/21/22 19:08*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**263**		4.99	mg/Kg			10/23/22 21:38	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-20605-A-1-E MS	Matrix Spike	101	92
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90
890-3243-1	BH03	111	95
LCS 880-37911/1-A	Lab Control Sample	99	91
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91
MB 880-37911/5-A	Method Blank	102	87
MB 880-38021/5-A	Method Blank	72	60 S1-

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-20579-A-1-C MS	Matrix Spike	77	78
880-20579-A-1-D MSD	Matrix Spike Duplicate	84	83
890-3243-1	BH03	86	95
LCS 880-37446/2-A	Lab Control Sample	96	105
LCSD 880-37446/3-A	Lab Control Sample Dup	98	102
MB 880-37446/1-A	Method Blank	116	130

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

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

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

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

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

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

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

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

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

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

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

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

Lab Sample ID: MB 880-37446/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37446**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 07:36	10/21/22 08:48	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

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

Lab Sample ID: MB 880-37446/1-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37446

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/21/22 07:36	10/21/22 08:48	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 07:36	10/21/22 08:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*10/21/22 07:36*	*10/21/22 08:48*	*1*
o-Terphenyl	*130*		*70 - 130*	*10/21/22 07:36*	*10/21/22 08:48*	*1*

Lab Sample ID: LCS 880-37446/2-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37446

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	977.4		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	900.1		mg/Kg		90	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*105*		*70 - 130*

Lab Sample ID: LCSD 880-37446/3-A
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37446

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1058		mg/Kg		106	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	1000	970.9		mg/Kg		97	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*98*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: 880-20579-A-1-C MS
Matrix: Solid
Analysis Batch: 37444

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37446

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	888.0		mg/Kg		84	70 - 130
Diesel Range Organics (Over C10-C28)	<49.8	U	998	717.3		mg/Kg		72	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*77*		*70 - 130*
o-Terphenyl	*78*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

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

Lab Sample ID: 880-20579-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 37444 — **Prep Batch: 37446**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	1056		mg/Kg		101	70 - 130	17	20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	767.2		mg/Kg		77	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*84*		*70 - 130*
o-Terphenyl	*83*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

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

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

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

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

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

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

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

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

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

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

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

GC VOA

Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 38021

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

Analysis Batch: 38089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

Analysis Batch: 38189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8015B NM	37446
MB 880-37446/1-A	Method Blank	Total/NA	Solid	8015B NM	37446
LCS 880-37446/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37446
LCSD 880-37446/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37446
880-20579-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37446
880-20579-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37446

Prep Batch: 37446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8015NM Prep	
MB 880-37446/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37446/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37446/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-20579-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-20579-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

HPLC/IC

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Client Sample ID: BH03

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

Lab Sample ID: 890-3243-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 03:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38189	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37626	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37446	10/21/22 13:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 19:08	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 21:38	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Laboratory: Eurofins Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
N/A	N/A	None on record.	

Method Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3243-1	BH03	Solid	10/19/22 10:40	10/20/22 09:38	1.5'

Chain of Custody

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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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.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:	PLU 30 Big Sinks Battery	Turn Around	☒ Routine ☐ Rush
Project Number:	03E1558016	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TM007	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	3.0	
Total Containers:		Corrected Temperature:	2.8	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
BH01	S	10/10/22	1040	1	G	1	/	/	/

890-3243 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID:
nAPP2209137379 nAPP2208351954 nAPP2208853301
Cost Center:
2037891001
AFE:

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10.20.2293	4		
3			6		
5					

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3243-1
SDG Number: 03E1558016

Login Number: 3243
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3243-1
SDG Number: 03E1558016

Login Number: 3243
List Number: 2
Creator: Rodriguez, Leticia

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

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/27/2022 10:07:28 AM Revision 1

JOB DESCRIPTION

PLU 30 BIG SINKS CTB
SDG NUMBER 03E1558016

JOB NUMBER

890-3291-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

my EOL

Eurofins Carlsbad

Job Notes

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

Authorization

Generated
12/27/2022 10:07:28 AM
Revision 1

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

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Laboratory Job ID: 890-3291-1
SDG: 03E1558016

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
S1+	Surrogate recovery exceeds control limits, high biased.
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: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Job ID: 890-3291-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3291-1

REVISION

The report being provided is a revision of the original report sent on 11/1/2022. The report (revision 1) is being revised due to Per client email, requesting sample ID correction and sample depth.

Report revision history

Receipt
The samples were received on 10/25/2022 3:17 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 1.4°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: FS03A (890-3291-1) and FS04A (890-3291-2).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38099 and analytical batch 880-38214 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: FS03A (890-3291-1), (890-3291-A-1-C MS) and (890-3291-A-1-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-38024/2-A) and (LCSD 880-38024/3-A). Evidence of matrix interferences is not obvious.

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

HPLC/IC
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: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Client Sample ID: FS03A

Date Collected: 10/24/22 10:45
Date Received: 10/25/22 15:17
Sample Depth: 1 feet b

Lab Sample ID: 890-3291-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Toluene	**0.00241**		0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
m-Xylene & p-Xylene	**0.0464**		0.00399	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
o-Xylene	**0.0151**		0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Xylenes, Total	**0.0615**		0.00399	mg/Kg		10/28/22 12:40	10/31/22 18:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*	*10/28/22 12:40*	*10/31/22 18:36*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*10/28/22 12:40*	*10/31/22 18:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0639**		0.00399	mg/Kg			11/01/22 09:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**6070**		49.8	mg/Kg			10/31/22 13:27	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**321**		49.8	mg/Kg		10/27/22 15:04	10/29/22 22:42	1
Diesel Range Organics (Over C10-C28)	**5750**		49.8	mg/Kg		10/27/22 15:04	10/29/22 22:42	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/27/22 15:04	10/29/22 22:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*10/27/22 15:04*	*10/29/22 22:42*	*1*
o-Terphenyl	*151*	*S1+*	*70 - 130*	*10/27/22 15:04*	*10/29/22 22:42*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**62.2**		4.97	mg/Kg			10/30/22 09:20	1

Client Sample ID: FS04A

Date Collected: 10/24/22 13:50
Date Received: 10/25/22 15:17
Sample Depth: 1 feet b

Lab Sample ID: 890-3291-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
m-Xylene & p-Xylene	**0.00946**		0.00398	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
o-Xylene	**0.228**		0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Xylenes, Total	**0.237**		0.00398	mg/Kg		10/28/22 12:40	10/31/22 19:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*10/28/22 12:40*	*10/31/22 19:02*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Client Sample ID: FS04A

Date Collected: 10/24/22 13:50
Date Received: 10/25/22 15:17
Sample Depth: 1 feet b

Lab Sample ID: 890-3291-2

Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*10/28/22 12:40*	*10/31/22 19:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.237**		0.00398	mg/Kg			11/01/22 09:15	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**5030**		50.0	mg/Kg			10/31/22 13:36	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/27/22 13:59	10/29/22 15:55	1
Diesel Range Organics (Over C10-C28)	**4540**		50.0	mg/Kg		10/27/22 13:59	10/29/22 15:55	1
Oil Range Organics (Over C28-C36)	**488**		50.0	mg/Kg		10/27/22 13:59	10/29/22 15:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*101*		*70 - 130*	*10/27/22 13:59*	*10/29/22 15:55*	*1*
o-Terphenyl	*115*		*70 - 130*	*10/27/22 13:59*	*10/29/22 15:55*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**107**		4.99	mg/Kg			10/30/22 09:27	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-20720-A-21-C MS	Matrix Spike	105	96
880-20720-A-21-D MSD	Matrix Spike Duplicate	98	92
890-3291-1	FS03A	121	87
890-3291-2	FS04A	117	113
LCS 880-38099/1-A	Lab Control Sample	118	90
LCSD 880-38099/2-A	Lab Control Sample Dup	120	99
MB 880-38099/5-A	Method Blank	79	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)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3282-A-1-C MS	Matrix Spike	82	85
890-3282-A-1-D MSD	Matrix Spike Duplicate	99	102
890-3291-1	FS03A	96	151 S1+
890-3291-1 MS	FS03A	105	175 S1+
890-3291-1 MSD	FS03A	101	169 S1+
890-3291-2	FS04A	101	115
LCS 880-38024/2-A	Lab Control Sample	121	141 S1+
LCS 880-38030/2-A	Lab Control Sample	110	113
LCSD 880-38024/3-A	Lab Control Sample Dup	127	145 S1+
LCSD 880-38030/3-A	Lab Control Sample Dup	104	103
MB 880-38024/1-A	Method Blank	92	103
MB 880-38030/1-A	Method Blank	83	86

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-38099/5-A
Matrix: Solid
Analysis Batch: 38214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38099

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/28/22 12:40	10/31/22 11:40	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/28/22 12:40	10/31/22 11:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/28/22 12:40	10/31/22 11:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/28/22 12:40	10/31/22 11:40	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/28/22 12:40	10/31/22 11:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/28/22 12:40	10/31/22 11:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*	*10/28/22 12:40*	*10/31/22 11:40*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*10/28/22 12:40*	*10/31/22 11:40*	*1*

Lab Sample ID: LCS 880-38099/1-A
Matrix: Solid
Analysis Batch: 38214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38099

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09267		mg/Kg		93	70 - 130		
Toluene			0.100	0.08730		mg/Kg		87	70 - 130		
Ethylbenzene			0.100	0.08721		mg/Kg		87	70 - 130		
m-Xylene & p-Xylene			0.200	0.1768		mg/Kg		88	70 - 130		
o-Xylene			0.100	0.08756		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 880-38099/2-A
Matrix: Solid
Analysis Batch: 38214

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38099

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09817		mg/Kg		98	70 - 130	6	35
Toluene			0.100	0.08916		mg/Kg		89	70 - 130	2	35
Ethylbenzene			0.100	0.08955		mg/Kg		90	70 - 130	3	35
m-Xylene & p-Xylene			0.200	0.1831		mg/Kg		92	70 - 130	3	35
o-Xylene			0.100	0.08959		mg/Kg		90	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 880-20720-A-21-C MS
Matrix: Solid
Analysis Batch: 38214

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38099

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U F1	0.0998	0.06269	F1	mg/Kg		63	70 - 130		
Toluene	<0.00200	U F1	0.0998	0.05124	F1	mg/Kg		51	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

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

Lab Sample ID: 880-20720-A-21-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38214 — **Prep Batch: 38099**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0998	0.04323	F1	mg/Kg		43	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.200	0.08653	F1	mg/Kg		43	70 - 130
o-Xylene	<0.00200	U F1	0.0998	0.04264	F1	mg/Kg		43	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 880-20720-A-21-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38214 — **Prep Batch: 38099**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0990	0.06961		mg/Kg		70	70 - 130	10	35
Toluene	<0.00200	U F1	0.0990	0.06111	F1	mg/Kg		62	70 - 130	18	35
Ethylbenzene	<0.00200	U F1	0.0990	0.05794	F1	mg/Kg		59	70 - 130	29	35
m-Xylene & p-Xylene	<0.00401	U F1	0.198	0.1157	F1	mg/Kg		58	70 - 130	29	35
o-Xylene	<0.00200	U F1	0.0990	0.05577	F1	mg/Kg		56	70 - 130	27	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

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

Lab Sample ID: MB 880-38024/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38137 — **Prep Batch: 38024**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/27/22 13:59	10/29/22 10:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/27/22 13:59	10/29/22 10:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/27/22 13:59	10/29/22 10:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*10/27/22 13:59*	*10/29/22 10:00*	*1*
o-Terphenyl	*103*		*70 - 130*	*10/27/22 13:59*	*10/29/22 10:00*	*1*

Lab Sample ID: LCS 880-38024/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 38137 — **Prep Batch: 38024**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1170		mg/Kg		117	70 - 130
Diesel Range Organics (Over C10-C28)	1000	855.4		mg/Kg		86	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

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

Lab Sample ID: LCS 880-38024/2-A
Matrix: Solid
Analysis Batch: 38137

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38024

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	121		70 - 130
o-Terphenyl	141	S1+	70 - 130

Lab Sample ID: LCSD 880-38024/3-A
Matrix: Solid
Analysis Batch: 38137

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38024

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1233		mg/Kg		123	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	912.3		mg/Kg		91	70 - 130	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	127		70 - 130
o-Terphenyl	145	S1+	70 - 130

Lab Sample ID: 890-3282-A-1-C MS
Matrix: Solid
Analysis Batch: 38137

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 38024

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	994.7		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	<49.8	U	998	895.0		mg/Kg		88	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: 890-3282-A-1-D MSD
Matrix: Solid
Analysis Batch: 38137

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 38024

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	998	914.9		mg/Kg		90	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	<49.8	U	998	1085		mg/Kg		107	70 - 130	19	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	102		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

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

Lab Sample ID: MB 880-38030/1-A
Matrix: Solid
Analysis Batch: 38135

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38030

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/27/22 15:04	10/29/22 21:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/27/22 15:04	10/29/22 21:37	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/27/22 15:04	10/29/22 21:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*10/27/22 15:04*	*10/29/22 21:37*	*1*
o-Terphenyl	*86*		*70 - 130*	*10/27/22 15:04*	*10/29/22 21:37*	*1*

Lab Sample ID: LCS 880-38030/2-A
Matrix: Solid
Analysis Batch: 38135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38030

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	820.2		mg/Kg		82	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1025		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*110*		*70 - 130*
o-Terphenyl	*113*		*70 - 130*

Lab Sample ID: LCSD 880-38030/3-A
Matrix: Solid
Analysis Batch: 38135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 38030

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	811.4		mg/Kg		81	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	945.5		mg/Kg		95	70 - 130	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*104*		*70 - 130*
o-Terphenyl	*103*		*70 - 130*

Lab Sample ID: 890-3291-1 MS
Matrix: Solid
Analysis Batch: 38135

Client Sample ID: FS03A
Prep Type: Total/NA
Prep Batch: 38030

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	321		998	1085		mg/Kg		77	70 - 130		
Diesel Range Organics (Over C10-C28)	5750		998	6103	4	mg/Kg		35	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

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

Lab Sample ID: 890-3291-1 MS
Matrix: Solid
Analysis Batch: 38135

Client Sample ID: FS03A
Prep Type: Total/NA
Prep Batch: 38030

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*175*	*S1+*	*70 - 130*

Lab Sample ID: 890-3291-1 MSD
Matrix: Solid
Analysis Batch: 38135

Client Sample ID: FS03A
Prep Type: Total/NA
Prep Batch: 38030

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	321		998	1054		mg/Kg		74	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	5750		998	5872	4	mg/Kg		12	70 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*101*		*70 - 130*
o-Terphenyl	*169*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38007/1-A
Matrix: Solid
Analysis Batch: 38166

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/30/22 08:00	1

Lab Sample ID: LCS 880-38007/2-A
Matrix: Solid
Analysis Batch: 38166

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	263.5		mg/Kg		105	90 - 110		

Lab Sample ID: LCSD 880-38007/3-A
Matrix: Solid
Analysis Batch: 38166

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	264.0		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 890-3286-A-1-B MS
Matrix: Solid
Analysis Batch: 38166

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	10600		5030	15700		mg/Kg		101	90 - 110		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3286-A-1-C MSD
Matrix: Solid
Analysis Batch: 38166

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	10600		5030	15700		mg/Kg		101	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

GC VOA

Prep Batch: 38099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	5035	
890-3291-2	FS04A	Total/NA	Solid	5035	
MB 880-38099/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38099/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38099/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20720-A-21-C MS	Matrix Spike	Total/NA	Solid	5035	
880-20720-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 38214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8021B	38099
890-3291-2	FS04A	Total/NA	Solid	8021B	38099
MB 880-38099/5-A	Method Blank	Total/NA	Solid	8021B	38099
LCS 880-38099/1-A	Lab Control Sample	Total/NA	Solid	8021B	38099
LCSD 880-38099/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38099
880-20720-A-21-C MS	Matrix Spike	Total/NA	Solid	8021B	38099
880-20720-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38099

Analysis Batch: 38336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	Total BTEX	
890-3291-2	FS04A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 38024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-2	FS04A	Total/NA	Solid	8015NM Prep	
MB 880-38024/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38024/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3282-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3282-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 38030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8015NM Prep	
MB 880-38030/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38030/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38030/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3291-1 MS	FS03A	Total/NA	Solid	8015NM Prep	
890-3291-1 MSD	FS03A	Total/NA	Solid	8015NM Prep	

Analysis Batch: 38135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8015B NM	38030
MB 880-38030/1-A	Method Blank	Total/NA	Solid	8015B NM	38030
LCS 880-38030/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38030
LCSD 880-38030/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38030
890-3291-1 MS	FS03A	Total/NA	Solid	8015B NM	38030
890-3291-1 MSD	FS03A	Total/NA	Solid	8015B NM	38030

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

GC Semi VOA

Analysis Batch: 38137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-2	FS04A	Total/NA	Solid	8015B NM	38024
MB 880-38024/1-A	Method Blank	Total/NA	Solid	8015B NM	38024
LCS 880-38024/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38024
LCSD 880-38024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38024
890-3282-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38024
890-3282-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38024

Analysis Batch: 38277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8015 NM	
890-3291-2	FS04A	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 38007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Soluble	Solid	DI Leach	
890-3291-2	FS04A	Soluble	Solid	DI Leach	
MB 880-38007/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38007/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38007/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3286-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3286-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 38166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Soluble	Solid	300.0	38007
890-3291-2	FS04A	Soluble	Solid	300.0	38007
MB 880-38007/1-A	Method Blank	Soluble	Solid	300.0	38007
LCS 880-38007/2-A	Lab Control Sample	Soluble	Solid	300.0	38007
LCSD 880-38007/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38007
890-3286-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	38007
890-3286-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38007

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Client Sample ID: FS03A
Date Collected: 10/24/22 10:45
Date Received: 10/25/22 15:17

Lab Sample ID: 890-3291-1
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	38099	10/28/22 12:40	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38214	10/31/22 18:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38336	11/01/22 09:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38277	10/31/22 13:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	38030	10/27/22 15:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38135	10/29/22 22:42	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	38007	10/27/22 11:23	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38166	10/30/22 09:20	CH	EET MID

Client Sample ID: FS04A
Date Collected: 10/24/22 13:50
Date Received: 10/25/22 15:17

Lab Sample ID: 890-3291-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	38099	10/28/22 12:40	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38214	10/31/22 19:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38336	11/01/22 09:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38277	10/31/22 13:36	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	38024	10/27/22 13:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38137	10/29/22 15:55	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	38007	10/27/22 11:23	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38166	10/30/22 09:27	CH	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Laboratory: Eurofins Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
N/A	N/A	None on record.	

Method Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3291-1	FS03A	Solid	10/24/22 10:45	10/25/22 15:17	1 feet b
890-3291-2	FS04A	Solid	10/24/22 13:50	10/25/22 15:17	1 feet b

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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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.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:	PLU 30 Big Sinks CTB	Turn Around	☑ Routine ☐ Rush
Project Number:	03E1558016	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT	Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No		Thermometer ID:	TNM007
Cooler Custody Seals:	Yes No (N/A)		Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)		Temperature Reading:	1.6
Total Containers:			Corrected Temperature:	1.4

ANALYSIS REQUEST — Parameters (Pres. Code)

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
FS03	S	10/24/2022	10:45	0.5	Comp	1	x	x	x
FS04	S	10/24/2022	1:50	0.5	Comp	1	x	x	x

890-3291 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID:
nAPP2229137378 nAPP2229331934 nAPP2229333301

Cost Center: 2037891001

AFE:

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]	[signature]	10.25.22 1557	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3291-1
SDG Number: 03E1558016

Login Number: 3291
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3291-1
SDG Number: 03E1558016

Login Number: 3291
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 10/27/22 10:25 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

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/27/2022 10:05:00 AM Revision 1

JOB DESCRIPTION

PLU 30 Big Sinks Battery
SDG NUMBER 03E1558016

JOB NUMBER

890-3247-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

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

Authorization

Generated
12/27/2022 10:05:00 AM
Revision 1

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

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Laboratory Job ID: 890-3247-1
SDG: 03E1558016

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Job ID: 890-3247-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-3247-1

REVISION

The report being provided is a revision of the original report sent on 10/24/2022. The report (revision 1) is being revised due to Per client email, requesting sample depths to be corrected.

Report revision history

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

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: FS01A (890-3247-1) and FS02A (890-3247-2).

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

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

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-37511 and analytical batch 880-37598 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Client Sample ID: FS01A

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

Lab Sample ID: 890-3247-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	1
Toluene	<0.00201	U	0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	1
Ethylbenzene	**0.00261**		0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	1
m-Xylene & p-Xylene	**0.0306**		0.00402	mg/Kg		10/21/22 14:15	10/24/22 14:21	1
o-Xylene	**0.0117**		0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	1
Xylenes, Total	**0.0423**		0.00402	mg/Kg		10/21/22 14:15	10/24/22 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*10/21/22 14:15*	*10/24/22 14:21*	*1*
1,4-Difluorobenzene (Surr)	*73*		*70 - 130*	*10/21/22 14:15*	*10/24/22 14:21*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0449**		0.00402	mg/Kg			10/24/22 16:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**8680**		49.9	mg/Kg			10/24/22 09:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**244**		49.9	mg/Kg		10/21/22 13:50	10/22/22 00:39	1
Diesel Range Organics (Over C10-C28)	**5310**		49.9	mg/Kg		10/21/22 13:50	10/22/22 00:39	1
Oil Range Organics (Over C28-C36)	**3130**		49.9	mg/Kg		10/21/22 13:50	10/22/22 00:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*10/21/22 13:50*	*10/22/22 00:39*	*1*
o-Terphenyl	*121*		*70 - 130*	*10/21/22 13:50*	*10/22/22 00:39*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**224**		5.01	mg/Kg			10/23/22 21:42	1

Client Sample ID: FS02A

Date Collected: 10/19/22 14:15
Date Received: 10/20/22 09:38
Sample Depth: 1 feet b

Lab Sample ID: 890-3247-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
Toluene	<0.00199	U	0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
m-Xylene & p-Xylene	**0.0222**		0.00398	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
o-Xylene	**0.0105**		0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
Xylenes, Total	**0.0327**		0.00398	mg/Kg		10/21/22 14:15	10/24/22 15:02	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Client Sample ID: FS02A

Date Collected: 10/19/22 14:15
Date Received: 10/20/22 09:38
Sample Depth: 1 feet b

Lab Sample ID: 890-3247-2

Matrix: Solid

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*10/21/22 14:15*	*10/24/22 15:02*	*1*
1,4-Difluorobenzene (Surr)	*72*		*70 - 130*	*10/21/22 14:15*	*10/24/22 15:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0327**		0.00398	mg/Kg			10/24/22 16:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**5080**		50.0	mg/Kg			10/24/22 09:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**204**		50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
Diesel Range Organics (Over C10-C28)	**3150**		50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
Oil Range Organics (Over C28-C36)	**1730**		50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*10/21/22 13:50*	*10/22/22 01:20*	*1*
o-Terphenyl	*92*		*70 - 130*	*10/21/22 13:50*	*10/22/22 01:20*	*1*

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**80.0**		5.00	mg/Kg			10/23/22 21:47	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

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)
890-3247-1	FS01A	118	73
890-3247-2	FS02A	124	72
890-3253-A-1-A MS	Matrix Spike	100	95
890-3253-A-1-B MSD	Matrix Spike Duplicate	97	72
LCS 880-37514/1-A	Lab Control Sample	96	89
LCSD 880-37514/2-A	Lab Control Sample Dup	95	81
MB 880-37514/5-A	Method Blank	107	77

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3240-A-2-C MS	Matrix Spike	82	84
890-3240-A-2-D MSD	Matrix Spike Duplicate	79	81
890-3247-1	FS01A	110	121
890-3247-2	FS02A	88	92
LCS 880-37503/2-A	Lab Control Sample	90	100
LCSD 880-37503/3-A	Lab Control Sample Dup	99	110
MB 880-37503/1-A	Method Blank	118	133 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37514/5-A
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 37514

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*10/21/22 14:15*	*10/24/22 10:42*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*10/21/22 14:15*	*10/24/22 10:42*	*1*

Lab Sample ID: LCS 880-37514/1-A
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1046		mg/Kg		105	70 - 130
Toluene	0.100	0.1066		mg/Kg		107	70 - 130
Ethylbenzene	0.100	0.09931		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	0.200	0.2054		mg/Kg		103	70 - 130
o-Xylene	0.100	0.1034		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 880-37514/2-A
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09576		mg/Kg		96	70 - 130	9	35
Toluene	0.100	0.09860		mg/Kg		99	70 - 130	8	35
Ethylbenzene	0.100	0.1009		mg/Kg		101	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1953		mg/Kg		98	70 - 130	5	35
o-Xylene	0.100	0.09779		mg/Kg		98	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*

Lab Sample ID: 890-3253-A-1-A MS
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.100	0.1004		mg/Kg		99	70 - 130
Toluene	<0.00201	U	0.100	0.1142		mg/Kg		109	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

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

Lab Sample ID: 890-3253-A-1-A MS
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.100	0.09592		mg/Kg		96	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.200	0.2008		mg/Kg		100	70 - 130
o-Xylene	<0.00201	U	0.100	0.1000		mg/Kg		100	70 - 130

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

Lab Sample ID: 890-3253-A-1-B MSD
Matrix: Solid
Analysis Batch: 37615

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 37514

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0996	0.09485		mg/Kg		94	70 - 130	6	35
Toluene	<0.00201	U	0.0996	0.09849		mg/Kg		94	70 - 130	15	35
Ethylbenzene	<0.00201	U	0.0996	0.09498		mg/Kg		95	70 - 130	1	35
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1982		mg/Kg		100	70 - 130	1	35
o-Xylene	<0.00201	U	0.0996	0.1021		mg/Kg		103	70 - 130	2	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*72*		*70 - 130*

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

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

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1

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

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

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

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

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

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

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

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

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

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

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

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

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

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

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

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

Lab Sample ID: 890-3240-A-2-D MSD
Matrix: Solid
Analysis Batch: 37444

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	1014		mg/Kg		102	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	762.1		mg/Kg		74	70 - 130	3	20

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

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1-A
Matrix: Solid
Analysis Batch: 37598

Client Sample ID: Method Blank
Prep Type: Soluble

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

Lab Sample ID: LCS 880-37511/2-A
Matrix: Solid
Analysis Batch: 37598

Client Sample ID: Lab Control Sample
Prep Type: Soluble

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

Lab Sample ID: LCSD 880-37511/3-A
Matrix: Solid
Analysis Batch: 37598

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	259.0		mg/Kg		104	90 - 110	0	20

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

Client Sample ID: Matrix Spike
Prep Type: Soluble

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

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

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

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

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

GC VOA

Prep Batch: 37514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	5035	
890-3247-2	FS02A	Total/NA	Solid	5035	
MB 880-37514/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 37615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8021B	37514
890-3247-2	FS02A	Total/NA	Solid	8021B	37514
MB 880-37514/5-A	Method Blank	Total/NA	Solid	8021B	37514
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	8021B	37514
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37514
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	37514
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37514

Analysis Batch: 37725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	Total BTEX	
890-3247-2	FS02A	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 37444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8015B NM	37503
890-3247-2	FS02A	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37503
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37503

Prep Batch: 37503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8015NM Prep	
890-3247-2	FS02A	Total/NA	Solid	8015NM Prep	
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 37630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8015 NM	
890-3247-2	FS02A	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

HPLC/IC

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Soluble	Solid	DI Leach	
890-3247-2	FS02A	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 37598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Soluble	Solid	300.0	37511
890-3247-2	FS02A	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Client Sample ID: FS01A
Date Collected: 10/19/22 14:10
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3247-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	37514	10/21/22 14:15	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37615	10/24/22 14:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37725	10/24/22 16:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			37630	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/22/22 00:39	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 21:42	CH	EET MID

Client Sample ID: FS02A
Date Collected: 10/19/22 14:15
Date Received: 10/20/22 09:38

Lab Sample ID: 890-3247-2
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	37514	10/21/22 14:15	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37615	10/24/22 15:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37725	10/24/22 16:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			37630	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/22/22 01:20	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 21:47	CH	EET MID

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Laboratory: Eurofins Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
N/A	N/A	None on record.	

Method Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1
SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3247-1	FS01A	Solid	10/19/22 14:10	10/20/22 09:38	1 feet b
890-3247-2	FS02A	Solid	10/19/22 14:15	10/20/22 09:38	1 feet b

Chain of Custody

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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:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.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:	PLU 30 Big Sinks Battery	Turn Around	
Project Number:	03E1558016	☒ Routine ☐ Rush	
Project Location:		Due Date:	
Sampler's Name:	Connor Whitman	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:		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Temperature Reading:		
Total Containers:		Corrected Temperature:		

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
FS01A	S	10/17/22	2:10	.5'	C	1		/	/	/
FS02A	S	10/17/22	2:15	.5'	C	1		/	/	/

Parameters

890-3247 Chain of Custody

Preservative Codes

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

Sample Comments

Incident ID:
nAPP2209137378 nAPP2208351954 nAPP2208853301
Cost Center:
2037891001
AFE:

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10.20.22938			
3			4		
5			6		

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3247-1
SDG Number: 03E1558016

Login Number: 3247
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3247-1
SDG Number: 03E1558016

Login Number: 3247
List Number: 2
Creator: Rodriguez, Leticia

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

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

ENSOLUM

APPENDIX D

NMOCD Notifications

From: Green, Garrett J
To: Tacoma Morrissey
Subject: FW: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)
Date: Friday, October 28, 2022 2:16:44 PM

[**EXTERNAL EMAIL**]

From: Green, Garrett J
Sent: Friday, October 28, 2022 1:11 PM
To: ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>
Subject: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)

All,

XTO plans to complete final sampling activities at the following sites the week of Oct 31, 2022.

Monday
- Poker Lake Unit 409/ nAPP2223751933

Tuesday
- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

Wednesday
- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

Thursday
- Poker Lake Unit 409/ nAPP2223751933
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

Friday
- Poker Lake Unit 409/ nAPP2223751933

Thank you!

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729

From: Collins, Melanie
To: DelawareSpills /SM; Green, Garrett J; Pennington, Shelby G
Cc: Ashley Ager; Kalei Jennings; Tacoma Morrissey; Ben Belill; Stuart Hyde
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560
Date: Tuesday, September 6, 2022 1:18:20 PM
Attachments: image001.png

[**EXTERNAL EMAIL**]

And the 3rd one arrived..released 3/19/22.

Melanie Collins

XTO ENERGY

Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: OCDOnline@state.nm.us [mailto:OCDOnline@state.nm.us]
Sent: Tuesday, September 6, 2022 12:57 PM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2209137379, for the following reasons:

- **The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 110560.

Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Robert Hamlet
575-748-1283
Robert.Hamlet@state.nm.us

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

From:	Hamlet, Robert, EMNRD
To:	Green, Garrett J
Cc:	Tacoma Morrissey; DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject:	RE: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379
Date:	Friday, April 29, 2022 9:31:38 AM

[**EXTERNAL EMAIL**]

Garrett,

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.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Thursday, April 28, 2022 4:39 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>
Subject: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379

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

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 30 Big Sinks CTB for three releases that occurred at the facility. Release dates are as follows (2/24/2022, 3/14/2022 and 3/19/2022), on Monday, May 2, 2022, at 10am MST. 24 hour release notifications were sent out on Friday, February 25, 2022 11:09 AM, Monday, March 14, 2022 3:05 PM and Saturday, March 19, 2022 12:47 PM since the releases were greater than 25 barrels in volume.

Please call us with any questions or concerns.

GPS Coordinates: (32.10395, -103.82149)

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

ENSOLUM

APPENDIX B

NMOCD Correspondence

From: Hamlet, Robert, EMNRD
To: Green, Garrett J
Cc: Tacoma Morrissey; DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn, EMNRD
Subject: RE: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379
Date: Friday, April 29, 2022 9:31:38 AM

[**EXTERNAL EMAIL**]

Garrett,

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.

Robert Hamlet ● Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Thursday, April 28, 2022 4:39 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM <DelawareSpills@exxonmobil.com>
Subject: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379

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

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 30 Big Sinks CTB for three releases that occurred at the facility. Release dates are as follows (2/24/2022, 3/14/2022 and 3/19/2022), on Monday, May 2, 2022, at 10am MST. 24 hour release notifications were sent out on Friday, February 25, 2022 11:09 AM, Monday, March 14, 2022 3:05 PM and Saturday, March 19, 2022 12:47 PM since the releases were greater than 25 barrels in volume.

Please call us with any questions or concerns.

GPS Coordinates: (32.10395, -103.82149)

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: Aimee Cole
To: Tacoma Morrissey
Subject: FW: XTO Site Activities for the week of April 21st
Date: Monday, May 2, 2022 12:23:00 PM
Attachments: image001.png
image002.png
image003.png
image004.png

Aimee Cole
Senior Managing Scientist
720-384-7365
Ensolum, LLC

From: Green, Garrett J <garrett.green@exxonmobil.com>
Sent: Friday, April 29, 2022 10:00 AM
To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>; Chad.Hensley@state.nm.us
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Baker, Adrian <adrian.baker@exxonmobil.com>; Aimee Cole <acole@ensolum.com>
Subject: XTO Site Activities for the week of April 21st

[**EXTERNAL EMAIL**]

All,

XTO plans to complete final sampling activities at the following sites the week of May 2, 2022.

Monday
- PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

Tuesday
- PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

Wednesday
- ADU 624 / NAPP2123634554

Thursday
- ADU 624 / NAPP2123634554

Friday
- ADU 624 / NAPP2123634554

Thank you,

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: Collins, Melanie
To: DelawareSpills /SM; Green, Garrett J; Pennington, Shelby G
Cc: Ashley Ager; Kalei Jennings; Tacoma Morrissey; Ben Belill; Stuart Hyde
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560
Date: Tuesday, September 6, 2022 1:18:20 PM
Attachments: image001.png

[**EXTERNAL EMAIL**]

And the 3rd one arrived..released 3/19/22.

Melanie Collins

XTO ENERGY

Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: OCDOnline@state.nm.us [mailto:OCDOnline@state.nm.us]
Sent: Tuesday, September 6, 2022 12:57 PM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2209137379, for the following reasons:

- **The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 110560.

Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Robert Hamlet
575-748-1283
Robert.Hamlet@state.nm.us

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

From: Green, Garrett J
To: ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD
Cc: Tacoma Morrissey; DelawareSpills /SM
Subject: XTO - Sampling Notification (Week of 10/17/22 - 10/21/22)
Date: Monday, October 17, 2022 11:21:03 AM

[**EXTERNAL EMAIL**]

All,

Please see the update below to this week's sampling schedule. XTO plans to complete final sampling activities at the following sites the week of Oct 17, 2022.

Monday
- BEU 29W Vader 100H / nAPP2102831345

Tuesday
- BEU 29W Vader 100H / nAPP2102831345
- PLU 21 BD 125H/ nAPP2214547737

Wednesday
- BEU 29W Vader 100H / nAPP2102831345
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

Thursday
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301
- JRU 108 / nAPP2217931599
- JRU 106 / nAPP2212344322

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.
3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: Green, Garrett J
To: Tacoma Morrissey
Subject: FW: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)
Date: Friday, October 28, 2022 2:16:44 PM

[**EXTERNAL EMAIL**]

From: Green, Garrett J
Sent: Friday, October 28, 2022 1:11 PM
To: ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Cc: DelawareSpills /SM <DelawareSpills@exxonmobil.com>
Subject: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)

All,

XTO plans to complete final sampling activities at the following sites the week of Oct 31, 2022.

Monday
- Poker Lake Unit 409/ nAPP2223751933

Tuesday
- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

Wednesday
- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

Thursday
- Poker Lake Unit 409/ nAPP2223751933
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

Friday
- Poker Lake Unit 409/ nAPP2223751933

Thank you!

Garrett Green
Environmental Coordinator
Delaware Business Unit
(575) 200-0729

From: Collins, Melanie
To: Tacoma Morrissey; Ashley Ager; Ben Belill
Cc: Pennington, Shelby G; Green, Garrett J; DelawareSpills /SM
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193687
Date: Monday, July 10, 2023 4:46:34 PM
Attachments: image001.png

[**EXTERNAL EMAIL**]

Deferral Denial for PLU 30 BS TB released 2/24/22 ---Deferral was submitted 3/6/23.

Melanie Collins
XTO ENERGY
Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Monday, July 10, 2023 4:37 PM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193687

External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2206853301, for the following reasons:

- **The Deferral Request is Denied. The "step-out" samples on pad to verify the edge of the release should only be a maximum of 1-2 feet from the observed edge of the release. Stepping out away from the release area toward the edge of the pad may tell us whether or not the release left the active well pad, but it does not tell us where the actual edge of the release is located. When equipment is located in and around the release area, samples must come from the sidewalls of the release area excavation. The OCD needs to know if the release went in, around, or under equipment/tanks/pipelines. Not having sidewall samples from the actual excavation won't give us those sampling data points that we need. On future reports, "step-out" samples should only be taken a maximum of 1-2 feet from the observed edge of the release area. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area. Please conduct sidewalls in the release area excavation.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 193687.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Robert Hamlet
575-748-1283
Robert.Hamlet@emnrd.nm.gov

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

From: Collins, Melanie
To: Tacoma Morrissey; Ashley Ager; Ben Belill
Cc: Green, Garrett J; DelawareSpills /SM; Pennington, Shelby G
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193699
Date: Tuesday, July 11, 2023 3:20:07 PM
Attachments: image001.png

[**EXTERNAL EMAIL**]

Another PLU 30 BS denial, from the multi-incident report. Release date is 3/14/22.

Melanie Collins
XTO ENERGY
Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Tuesday, July 11, 2023 3:12 PM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193699

External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2208351954, for the following reasons:

- **The Deferral Request is Denied. The "step-out" samples on pad to verify the edge of the release should only be a maximum of 1-2 feet from the observed edge of the release. Stepping out away from the release area toward the edge of the pad may tell us whether or not the release left the active well pad, but it does not tell us where the actual edge of the release is located. When equipment is located in and around the release area, samples must come from the sidewalls of the release area excavation. The OCD needs to know if the release went in, around, or under equipment/tanks/pipelines. Not having sidewall samples from the actual excavation won't give us those sampling data points that we need. On future reports, "step-out" samples should only be taken a maximum of 1-2 feet from the observed edge of the release area. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area. Please conduct sidewalls in the release area excavation.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 193699.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Robert Hamlet
575-748-1283
Robert.Hamlet@emnrd.nm.gov

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

From: Collins, Melanie
To: Tacoma Morrissey; Ben Belill; Ashley Ager
Cc: DelawareSpills /SM; Green, Garrett J; Pennington, Shelby G
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193710
Date: Friday, June 30, 2023 8:00:12 AM
Attachments: image001.png

[**EXTERNAL EMAIL**]

Another deferral denial….PLU 30 Big Sinks CTB released 3/19/22; deferral submitted 5/25/22.

Melanie Collins

Environmental Technician
melanie.collins@exxonmobil.com
432-556-3756

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Thursday, June 29, 2023 5:27 PM
To: Collins, Melanie <melanie.collins@exxonmobil.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193710

External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2209137379,
for the following reasons:

- **This deferral application is not approved. • The release should be horizontally and vertically delineated to 600 mg/kg for chlorides 100 mg/kg TPH to define the edges of the release. • Delineation samples must include lab tested analytical results. • A scaled diagram of the release area was not included in this report.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 193710.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Jocelyn Harimon
Environmental Specialist

ENSOLUM

APPENDIX C

Photographic Log

ENSOLUM

Photographic Log
XTO Energy, Inc
PLU 30 Big Sinks Battery
naPP2209137379, nAPP2208351954, nAPP2206853301

Photograph: 1 Date: 4/15/2022
Description: Soil staining within the release extent.
View: North

Photograph: 2 Date: 5/2/2022
Description: Liner inspection activities.
View: West

Photograph: 3 Date: 5/2/2022
Description: Hand shoveled excavation extent.
View: North

Photograph: 4 Date:5/2/2022
Description: Hand shoveled excavation extent.
View: South.

ENSOLUM

Photographic Log
XTO Energy, Inc
PLU 30 Big Sinks Battery
naPP2209137379, nAPP2208351954, nAPP2206853301

Photograph: 5 Date: 11/04/2022
Description: Elevated view, east section of release.
View: Northwest

Photograph: 6 Date: 10/24/2022
Description: Hand excavation of staining.
View: Southeast

Photograph: 7 Date: 10/24/2022
Description: Hand excavation of staining.
View: Northeast

Photograph: 8 Date: 2/2/2024
Description: Excavation extent.
View: Northwest

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 2/13/2024 12:22:15 PM

JOB DESCRIPTION

PLU 30 BIG SINKS BATTERY
03C1558016

JOB NUMBER

890-6096-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization

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Authorized for release by
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Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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 Job ID: 890-6096-1
Project: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1 Eurofins Carlsbad

Job Narrative
890-6096-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 2/1/2024 2:43 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 0.4°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SW01 (890-6096-1), SW02 (890-6096-2), SS03 (890-6096-3), SS04 (890-6096-4), SS05 (890-6096-5), SS06 (890-6096-6) and SS07 (890-6096-7).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-72821 and analytical batch 880-72835 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SW01 (890-6096-1) and SS07 (890-6096-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-72531 and analytical batch 880-72814 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SW01 (890-6096-1), SW02 (890-6096-2), SS03 (890-6096-3), SS04 (890-6096-4), (890-6096-A-2-C MS) and (890-6096-A-2-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The method blank for preparation batch 880-72531 and analytical batch 880-72814 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for preparation batch 880-72531 and analytical batch 880-72814. The associated laboratory control sample (LCS) met acceptance criteria.

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: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SW01

Date Collected: 02/01/24 10:50
Date Received: 02/01/24 14:43
Sample Depth: 0-1

Lab Sample ID: 890-6096-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Toluene	<0.00201	U	0.00201		mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/11/24 13:30	02/13/24 07:21	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		02/11/24 13:30	02/13/24 07:21	1
o-Xylene	**0.00251**		0.00201		mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/11/24 13:30	02/13/24 07:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*321*	*S1+*	*70 - 130*	*02/11/24 13:30*	*02/13/24 07:21*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*02/11/24 13:30*	*02/13/24 07:21*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/13/24 07:21	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<248	U	248		mg/Kg			02/11/24 21:36	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<248	U	248		mg/Kg		02/06/24 16:51	02/11/24 21:36	5
Diesel Range Organics (Over C10-C28)	<248	U	248		mg/Kg		02/06/24 16:51	02/11/24 21:36	5
OII Range Organics (Over C28-C36)	<248	U	248		mg/Kg		02/06/24 16:51	02/11/24 21:36	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*0.4*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 21:36*	*5*
o-Terphenyl	*2*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 21:36*	*5*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1040**		5.03		mg/Kg			02/06/24 22:33	1

Client Sample ID: SW02

Date Collected: 02/01/24 11:05
Date Received: 02/01/24 14:43
Sample Depth: 0-1

Lab Sample ID: 890-6096-2

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 07:42	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		02/11/24 13:30	02/13/24 07:42	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		02/11/24 13:30	02/13/24 07:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*02/11/24 13:30*	*02/13/24 07:42*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SW02

Date Collected: 02/01/24 11:05
Date Received: 02/01/24 14:43
Sample Depth: 0-1

Lab Sample ID: 890-6096-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*124*		*70 - 130*	*02/11/24 13:30*	*02/13/24 07:42*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			02/13/24 07:42	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/11/24 20:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U F1	50.5	mg/Kg		02/06/24 16:51	02/11/24 20:26	1
Diesel Range Organics (Over C10-C28)	<50.5	U F1	50.5	mg/Kg		02/06/24 16:51	02/11/24 20:26	1
OII Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		02/06/24 16:51	02/11/24 20:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*4*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 20:26*	*1*
o-Terphenyl	*0.4*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 20:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**95.9**		4.97	mg/Kg			02/06/24 22:40	1

Client Sample ID: SS03

Date Collected: 02/01/24 11:15
Date Received: 02/01/24 14:43
Sample Depth: 0.5

Lab Sample ID: 890-6096-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:02	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:02	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:02	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/11/24 13:30	02/13/24 08:02	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:02	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/11/24 13:30	02/13/24 08:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*02/11/24 13:30*	*02/13/24 08:02*	*1*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*	*02/11/24 13:30*	*02/13/24 08:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/13/24 08:02	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**50.3**		49.7	mg/Kg			02/11/24 21:58	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS03

Lab Sample ID: 890-6096-3
Matrix: Solid
Date Collected: 02/01/24 11:15
Date Received: 02/01/24 14:43
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	1
Diesel Range Organics (Over C10-C28)	**50.3**		49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	1
OII Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*25*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 21:58*	*1*
o-Terphenyl	*18*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 21:58*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**83.8**		4.95	mg/Kg			02/06/24 22:46	1

Client Sample ID: SS04

Lab Sample ID: 890-6096-4
Matrix: Solid
Date Collected: 02/01/24 11:20
Date Received: 02/01/24 14:43
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/11/24 13:30	02/13/24 08:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*02/11/24 13:30*	*02/13/24 08:23*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*02/11/24 13:30*	*02/13/24 08:23*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			02/13/24 08:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			02/11/24 22:21	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		02/06/24 16:51	02/11/24 22:21	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/06/24 16:51	02/11/24 22:21	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/06/24 16:51	02/11/24 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*66*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 22:21*	*1*
o-Terphenyl	*56*	*S1-*	*70 - 130*	*02/06/24 16:51*	*02/11/24 22:21*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS04

Lab Sample ID: 890-6096-4
Matrix: Solid
Date Collected: 02/01/24 11:20
Date Received: 02/01/24 14:43
Sample Depth: 0.5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**78.0**		4.95		mg/Kg			02/06/24 22:53	1

Client Sample ID: SS05

Lab Sample ID: 890-6096-5
Matrix: Solid
Date Collected: 02/01/24 11:25
Date Received: 02/01/24 14:43
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 08:43	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		02/11/24 13:30	02/13/24 08:43	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		02/11/24 13:30	02/13/24 08:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*02/11/24 13:30*	*02/13/24 08:43*	*1*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*	*02/11/24 13:30*	*02/13/24 08:43*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			02/13/24 08:43	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**201**		50.0		mg/Kg			02/11/24 22:43	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/06/24 16:51	02/11/24 22:43	1
Diesel Range Organics (Over C10-C28)	**201**		50.0		mg/Kg		02/06/24 16:51	02/11/24 22:43	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/06/24 16:51	02/11/24 22:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*02/06/24 16:51*	*02/11/24 22:43*	*1*
o-Terphenyl	*96*		*70 - 130*	*02/06/24 16:51*	*02/11/24 22:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**102**		5.05		mg/Kg			02/06/24 23:00	1

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS06

Lab Sample ID: 890-6096-6
Matrix: Solid
Date Collected: 02/01/24 11:30
Date Received: 02/01/24 14:43
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 09:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*02/11/24 13:30*	*02/13/24 09:04*	*1*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*	*02/11/24 13:30*	*02/13/24 09:04*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/13/24 09:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6	mg/Kg			02/11/24 23:05	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6	mg/Kg		02/06/24 16:51	02/11/24 23:05	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/06/24 16:51	02/11/24 23:05	1
OII Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/06/24 16:51	02/11/24 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*121*		*70 - 130*	*02/06/24 16:51*	*02/11/24 23:05*	*1*
o-Terphenyl	*123*		*70 - 130*	*02/06/24 16:51*	*02/11/24 23:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**75.3**		4.99	mg/Kg			02/06/24 23:20	1

Client Sample ID: SS07

Lab Sample ID: 890-6096-7
Matrix: Solid
Date Collected: 02/01/24 11:35
Date Received: 02/01/24 14:43
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/11/24 13:30	02/13/24 09:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*159*	*S1+*	*70 - 130*	*02/11/24 13:30*	*02/13/24 09:24*	*1*

Client Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS07
Date Collected: 02/01/24 11:35
Date Received: 02/01/24 14:43
Sample Depth: 0.5

Lab Sample ID: 890-6096-7
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*125*		*70 - 130*	*02/11/24 13:30*	*02/13/24 09:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			02/13/24 09:24	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			02/11/24 23:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
OII Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*02/06/24 16:51*	*02/11/24 23:26*	*1*
o-Terphenyl	*93*		*70 - 130*	*02/06/24 16:51*	*02/11/24 23:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**76.7**		5.01	mg/Kg			02/06/24 23:27	1

Surrogate Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

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)
890-6096-1	SW01	321 S1+	100
890-6096-2	SW02	106	124
890-6096-3	SS03	114	121
890-6096-4	SS04	115	130
890-6096-5	SS05	112	116
890-6096-6	SS06	113	116
890-6096-7	SS07	159 S1+	125
890-6102-A-6-C MS	Matrix Spike	103	107
890-6102-A-6-D MSD	Matrix Spike Duplicate	105	106
LCS 880-72821/1-A	Lab Control Sample	102	101
LCSD 880-72821/2-A	Lab Control Sample Dup	95	99
MB 880-72821/5-A	Method Blank	127	130
MB 880-72837/5-A	Method Blank	118	122

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)
890-6096-1	SW01	0.4 S1-	2 S1-
890-6096-2	SW02	4 S1-	0.4 S1-
890-6096-2 MS	SW02	0.9 S1-	0.3 S1-
890-6096-2 MSD	SW02	2 S1-	0.3 S1-
890-6096-3	SS03	25 S1-	18 S1-
890-6096-4	SS04	66 S1-	56 S1-
890-6096-5	SS05	96	96
890-6096-6	SS06	121	123
890-6096-7	SS07	90	93
LCS 880-72531/2-A	Lab Control Sample	120	115
LCSD 880-72531/3-A	Lab Control Sample Dup	105	101
MB 880-72531/1-A	Method Blank	204 S1+	221 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72821/5-A
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72821

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 00:57	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 00:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 00:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/11/24 13:30	02/13/24 00:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/11/24 13:30	02/13/24 00:57	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/11/24 13:30	02/13/24 00:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*	*02/11/24 13:30*	*02/13/24 00:57*	*1*
1,4-Difluorobenzene (Surr)	*130*		*70 - 130*	*02/11/24 13:30*	*02/13/24 00:57*	*1*

Lab Sample ID: LCS 880-72821/1-A
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 72821

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09626		mg/Kg		96	70 - 130		
Toluene			0.100	0.09713		mg/Kg		97	70 - 130		
Ethylbenzene			0.100	0.08842		mg/Kg		88	70 - 130		
m-Xylene & p-Xylene			0.200	0.2090		mg/Kg		104	70 - 130		
o-Xylene			0.100	0.09157		mg/Kg		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 880-72821/2-A
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 72821

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09743		mg/Kg		97	70 - 130	1	35
Toluene			0.100	0.09577		mg/Kg		96	70 - 130	1	35
Ethylbenzene			0.100	0.09049		mg/Kg		90	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.2036		mg/Kg		102	70 - 130	3	35
o-Xylene			0.100	0.08994		mg/Kg		90	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 890-6102-A-6-C MS
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 72821

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U F1	0.0996	0.06796	F1	mg/Kg		68	70 - 130		
Toluene	<0.00200	U F1	0.0996	0.06838	F1	mg/Kg		69	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

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

Lab Sample ID: 890-6102-A-6-C MS
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 72821

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1	0.0996	0.05975	F1	mg/Kg		60	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1426		mg/Kg		72	70 - 130
o-Xylene	<0.00200	U F1	0.0996	0.07199		mg/Kg		72	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-6102-A-6-D MSD
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 72821

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.0990	0.06864	F1	mg/Kg		69	70 - 130	1	35
Toluene	<0.00200	U F1	0.0990	0.06759	F1	mg/Kg		68	70 - 130	1	35
Ethylbenzene	<0.00200	U F1	0.0990	0.06441	F1	mg/Kg		65	70 - 130	7	35
m-Xylene & p-Xylene	<0.00401	U	0.198	0.1530		mg/Kg		77	70 - 130	7	35
o-Xylene	<0.00200	U F1	0.0990	0.06881	F1	mg/Kg		69	70 - 130	5	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: MB 880-72837/5-A
Matrix: Solid
Analysis Batch: 72835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72837

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/12/24 08:41	02/12/24 13:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*02/12/24 08:41*	*02/12/24 13:20*	*1*
1,4-Difluorobenzene (Surr)	*122*		*70 - 130*	*02/12/24 08:41*	*02/12/24 13:20*	*1*

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

Lab Sample ID: MB 880-72531/1-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72531

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		02/06/24 16:51	02/11/24 19:18	1

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

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

Lab Sample ID: MB 880-72531/1-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72531

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		02/06/24 16:51	02/11/24 19:18	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/06/24 16:51	02/11/24 19:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*204*	*S1+*	*70 - 130*	*02/06/24 16:51*	*02/11/24 19:18*	*1*
o-Terphenyl	*221*	*S1+*	*70 - 130*	*02/06/24 16:51*	*02/11/24 19:18*	*1*

Lab Sample ID: LCS 880-72531/2-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 72531

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1019		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1033		mg/Kg		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*120*		*70 - 130*
o-Terphenyl	*115*		*70 - 130*

Lab Sample ID: LCSD 880-72531/3-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 72531

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	903.6		mg/Kg		90	70 - 130	12	20
Diesel Range Organics (Over C10-C28)			1000	932.7		mg/Kg		93	70 - 130	10	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

Lab Sample ID: 890-6096-2 MS
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: SW02
Prep Type: Total/NA
Prep Batch: 72531

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.5	U F1	1010	<50.4	U F1	mg/Kg		2	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.5	U F1	1010	<50.4	U F1	mg/Kg		-0.1	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*0.9*	*S1-*	*70 - 130*
o-Terphenyl	*0.3*	*S1-*	*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

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

Lab Sample ID: 890-6096-2 MSD — **Client Sample ID: SW02**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 72814 — **Prep Batch: 72531**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.5	U F1	1010	<50.4	U F1	mg/Kg		2	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.5	U F1	1010	<50.4	U F1	mg/Kg		0.1	70 - 130	9	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*2*	*S1-*	*70 - 130*
o-Terphenyl	*0.3*	*S1-*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72305/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 72467

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			02/06/24 21:05	1

Lab Sample ID: LCS 880-72305/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 72467

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	255.0		mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-72305/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 72467

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	254.3		mg/Kg		102	90 - 110	0	20

Lab Sample ID: 890-6096-5 MS — **Client Sample ID: SS05**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 72467

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	102		253	368.0		mg/Kg		105	90 - 110

Lab Sample ID: 890-6096-5 MSD — **Client Sample ID: SS05**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 72467

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	102		253	365.8		mg/Kg		104	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

GC VOA

Prep Batch: 72821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	5035	
890-6096-2	SW02	Total/NA	Solid	5035	
890-6096-3	SS03	Total/NA	Solid	5035	
890-6096-4	SS04	Total/NA	Solid	5035	
890-6096-5	SS05	Total/NA	Solid	5035	
890-6096-6	SS06	Total/NA	Solid	5035	
890-6096-7	SS07	Total/NA	Solid	5035	
MB 880-72821/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72821/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72821/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6102-A-6-C MS	Matrix Spike	Total/NA	Solid	5035	
890-6102-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8021B	72821
890-6096-2	SW02	Total/NA	Solid	8021B	72821
890-6096-3	SS03	Total/NA	Solid	8021B	72821
890-6096-4	SS04	Total/NA	Solid	8021B	72821
890-6096-5	SS05	Total/NA	Solid	8021B	72821
890-6096-6	SS06	Total/NA	Solid	8021B	72821
890-6096-7	SS07	Total/NA	Solid	8021B	72821
MB 880-72821/5-A	Method Blank	Total/NA	Solid	8021B	72821
MB 880-72837/5-A	Method Blank	Total/NA	Solid	8021B	72837
LCS 880-72821/1-A	Lab Control Sample	Total/NA	Solid	8021B	72821
LCSD 880-72821/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72821
890-6102-A-6-C MS	Matrix Spike	Total/NA	Solid	8021B	72821
890-6102-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72821

Prep Batch: 72837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-72837/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 73053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	Total BTEX	
890-6096-2	SW02	Total/NA	Solid	Total BTEX	
890-6096-3	SS03	Total/NA	Solid	Total BTEX	
890-6096-4	SS04	Total/NA	Solid	Total BTEX	
890-6096-5	SS05	Total/NA	Solid	Total BTEX	
890-6096-6	SS06	Total/NA	Solid	Total BTEX	
890-6096-7	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 72531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8015NM Prep	
890-6096-2	SW02	Total/NA	Solid	8015NM Prep	
890-6096-3	SS03	Total/NA	Solid	8015NM Prep	
890-6096-4	SS04	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

GC Semi VOA (Continued)

Prep Batch: 72531 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-5	SS05	Total/NA	Solid	8015NM Prep	
890-6096-6	SS06	Total/NA	Solid	8015NM Prep	
890-6096-7	SS07	Total/NA	Solid	8015NM Prep	
MB 880-72531/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-72531/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-72531/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6096-2 MS	SW02	Total/NA	Solid	8015NM Prep	
890-6096-2 MSD	SW02	Total/NA	Solid	8015NM Prep	

Analysis Batch: 72814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8015B NM	72531
890-6096-2	SW02	Total/NA	Solid	8015B NM	72531
890-6096-3	SS03	Total/NA	Solid	8015B NM	72531
890-6096-4	SS04	Total/NA	Solid	8015B NM	72531
890-6096-5	SS05	Total/NA	Solid	8015B NM	72531
890-6096-6	SS06	Total/NA	Solid	8015B NM	72531
890-6096-7	SS07	Total/NA	Solid	8015B NM	72531
MB 880-72531/1-A	Method Blank	Total/NA	Solid	8015B NM	72531
LCS 880-72531/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	72531
LCSD 880-72531/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	72531
890-6096-2 MS	SW02	Total/NA	Solid	8015B NM	72531
890-6096-2 MSD	SW02	Total/NA	Solid	8015B NM	72531

Analysis Batch: 72975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8015 NM	
890-6096-2	SW02	Total/NA	Solid	8015 NM	
890-6096-3	SS03	Total/NA	Solid	8015 NM	
890-6096-4	SS04	Total/NA	Solid	8015 NM	
890-6096-5	SS05	Total/NA	Solid	8015 NM	
890-6096-6	SS06	Total/NA	Solid	8015 NM	
890-6096-7	SS07	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 72305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Soluble	Solid	DI Leach	
890-6096-2	SW02	Soluble	Solid	DI Leach	
890-6096-3	SS03	Soluble	Solid	DI Leach	
890-6096-4	SS04	Soluble	Solid	DI Leach	
890-6096-5	SS05	Soluble	Solid	DI Leach	
890-6096-6	SS06	Soluble	Solid	DI Leach	
890-6096-7	SS07	Soluble	Solid	DI Leach	
MB 880-72305/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72305/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72305/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6096-5 MS	SS05	Soluble	Solid	DI Leach	
890-6096-5 MSD	SS05	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

HPLC/IC

Analysis Batch: 72467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Soluble	Solid	300.0	72305
890-6096-2	SW02	Soluble	Solid	300.0	72305
890-6096-3	SS03	Soluble	Solid	300.0	72305
890-6096-4	SS04	Soluble	Solid	300.0	72305
890-6096-5	SS05	Soluble	Solid	300.0	72305
890-6096-6	SS06	Soluble	Solid	300.0	72305
890-6096-7	SS07	Soluble	Solid	300.0	72305
MB 880-72305/1-A	Method Blank	Soluble	Solid	300.0	72305
LCS 880-72305/2-A	Lab Control Sample	Soluble	Solid	300.0	72305
LCSD 880-72305/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72305
890-6096-5 MS	SS05	Soluble	Solid	300.0	72305
890-6096-5 MSD	SS05	Soluble	Solid	300.0	72305

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SW01

Date Collected: 02/01/24 10:50
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 07:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 07:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 21:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	72814	02/11/24 21:36	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:33	CH	EET MID

Client Sample ID: SW02

Date Collected: 02/01/24 11:05
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 07:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 07:42	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 20:26	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 20:26	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:40	CH	EET MID

Client Sample ID: SS03

Date Collected: 02/01/24 11:15
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 08:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 08:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 21:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 21:58	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:46	CH	EET MID

Client Sample ID: SS04

Date Collected: 02/01/24 11:20
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-4

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	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 08:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 08:23	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS04

Date Collected: 02/01/24 11:20
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-4

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			72975	02/11/24 22:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 22:21	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:53	CH	EET MID

Client Sample ID: SS05

Date Collected: 02/01/24 11:25
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-5

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	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 08:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 08:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 22:43	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 22:43	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:00	CH	EET MID

Client Sample ID: SS06

Date Collected: 02/01/24 11:30
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-6

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			4.97 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 09:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 09:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 23:05	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 23:05	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:20	CH	EET MID

Client Sample ID: SS07

Date Collected: 02/01/24 11:35
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-7

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	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 09:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 09:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 23:26	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 23:26	SM	EET MID

Lab Chronicle

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS07

Date Collected: 02/01/24 11:35
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-7

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			4.99 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:27	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

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	T104704400-23-26	06-30-24

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: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1
SDG: 03C1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6096-1	SW01	Solid	02/01/24 10:50	02/01/24 14:43	0-1
890-6096-2	SW02	Solid	02/01/24 11:05	02/01/24 14:43	0-1
890-6096-3	SS03	Solid	02/01/24 11:15	02/01/24 14:43	0.5
890-6096-4	SS04	Solid	02/01/24 11:20	02/01/24 14:43	0.5
890-6096-5	SS05	Solid	02/01/24 11:25	02/01/24 14:43	0.5
890-6096-6	SS06	Solid	02/01/24 11:30	02/01/24 14:43	0.5
890-6096-7	SS07	Solid	02/01/24 11:35	02/01/24 14:43	0.5

Chain of Custody

eurofins | Environment Testing Xenco

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

Work Order No: _____

www.xenco.com Page 1 of 1

Project Manager:	Tacoma Morrissey	Bill to: (if different)	Garrett Green
Company Name:	Ensolum	Company Name:	XTO Energy
Address:	3122 National Parks Hwy	Address:	3104 E. Green St.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	303-887-2946	Email:	Garrett.Green@ExxonMobil.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:	PLU 30 Big Sinks Battery	Turn Around	☑ Routine ☐ Rush
Project Number:	03C1558016	Due Date:	
Project Location:		TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Connor Whitman		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	Yes No
Samples Received Intact:	(Yes) No	Thermometer ID:	INM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	-0.6
Total Containers:		Corrected Temperature:	-0.4

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 3000.0)	TPH (8015)	BTEX (8021)
SW01	S	2/1/24	1050	0-1	C	1			
SW02			1105	0-1	C				
SS03			1115	.5	G				
SS04			1120	.5					
SS05			1125	.5					
SS06			1130	.5					
SS07	↓	↓	1135	.5	↓	↓			

Sample Comments
Incident ID: nAPP2209137379, nAPP2208351954, nAPP2206853301
Cost Center: 2037891001
AFE:

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

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

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

Revised Date: 08/25/2020 Rev: 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-6096-1
SDG Number: 03C1558016

Login Number: 6096
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Did not receive all required containers.
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: 890-6096-1
SDG Number: 03C1558016

Login Number: 6096
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 02/05/24 08:29 AM

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

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QUESTIONS

Action 359740

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 359740
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2209137379**
Incident Name	**NAPP2209137379 PLU 30 BIG SINKS CTB @ 0**
Incident Type	**Oil Release**
Incident Status	**Deferral Request Received**
Incident Facility	**[fAPP2203544302] PLU 30 BIG SINKS**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	PLU 30 BIG SINKS CTB
Date Release Discovered	03/19/2022
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Separator | Crude Oil | Released: 146 BBL | Recovered: 144 BBL | Lost: 2 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Separator | Produced Water | Released: 97 BBL | Recovered: 96 BBL | Lost: 1 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

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QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.**
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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.

I hereby agree and sign off to the above statement	Name: Amy Ruth Title: Coordinator SSHE Environmental Email: amy.ruth@exxonmobil.com Date: 06/28/2024

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QUESTIONS (continued)

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	Action Number: 359740
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	1040
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	6680
GRO+DRO (EPA SW-846 Method 8015M)	6070
BTEX (EPA SW-846 Method 8021B or 8260B)	0.1
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	04/15/2022
On what date will (or did) the final sampling or liner inspection occur	05/02/2022
On what date will (or was) the remediation complete(d)	02/01/2024
What is the estimated surface area (in square feet) that will be reclaimed	20000
What is the estimated volume (in cubic yards) that will be reclaimed	800
What is the estimated surface area (in square feet) that will be remediated	1075
What is the estimated volume (in cubic yards) that will be remediated	90
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 359740
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
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.	
I hereby agree and sign off to the above statement	Name: Amy Ruth Title: Coordinator SSHE Environmental Email: amy.ruth@exxonmobil.com Date: 06/28/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 359740
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Is the remaining contamination in areas immediately under or around production equipment where remediation could cause a major facility deconstruction	Yes
Please list or describe the production equipment and how (re)moving the equipment would cause major facility deconstruction	The release occurred immediately adjacent to a tank battery containment and is surrounded by surface production equipment. The area cannot be accessed except with personnel and hand tools.
What is the remaining surface area (in square feet) that will still need to be remediated if a deferral is granted	1075
What is the remaining volume (in cubic yards) that will still need to be remediated if a deferral is granted	30
Per Paragraph (2) of Subsection C of 19.15.29.12 NMAC if contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration and reclamation may be deferred with division written approval until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first.	
Enter the facility ID (f#) on which this deferral should be granted	PLU 30 BIG SINKS [fAPP2203544302]
Enter the well API (30-) on which this deferral should be granted	*Not answered.*
Contamination does not cause an imminent risk to human health, the environment, or groundwater	True
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
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.	
I hereby agree and sign off to the above statement	Name: Amy Ruth Title: Coordinator SSHE Environmental Email: amy.ruth@exxonmobil.com Date: 06/28/2024

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QUESTIONS (continued)

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	Action Number: 359740
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**308056**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**02/01/2024**
What was the (estimated) number of samples that were to be gathered	**10**
What was the sampling surface area in square feet	**2000**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 359740
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

CONDITIONS

Created By	Condition	Condition Date
crystal.walker	Deferral is approved for designated deferral area depicted on Figure 4 of Application 359740. The remaining impacted soil is fully delineated. Per 19.15.29.12.C.(2). If the contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration and reclamation may be deferred with division written approved until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first. Final remediation and reclamation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the site is no longer being used for oil and gas operations.	7/15/2024