Location:	PLU 30 Big Sinks Battery		
Spill Date:	2/24/2022		
	Area 1		
Approximate A	rea =	1031.00	sq. ft.
Average Satura	tion (or depth) of spill =	0.50	inches
Average Porosi	ty Factor =	0.03	
	VOLUME OF LEAK		
Total Crude Oil	=	0.23	bbls
	Area 2	•	
Approximate A	rea =	555.84	cu. ft.
Average Satura	tion (or depth) of spill =	0.00	inches
Average Porosi	ty Factor =	0.00	
	VOLUME OF LEAK		
Total Crude Oil	=	99.00	bbls
	TOTAL VOLUME OF LEAK		
Total Crude Oi	=	99.23	bbls
	TOTAL VOLUME RECOVERED		
Total Crude Oi	=	99.00	bbls



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

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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

Mourissey

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

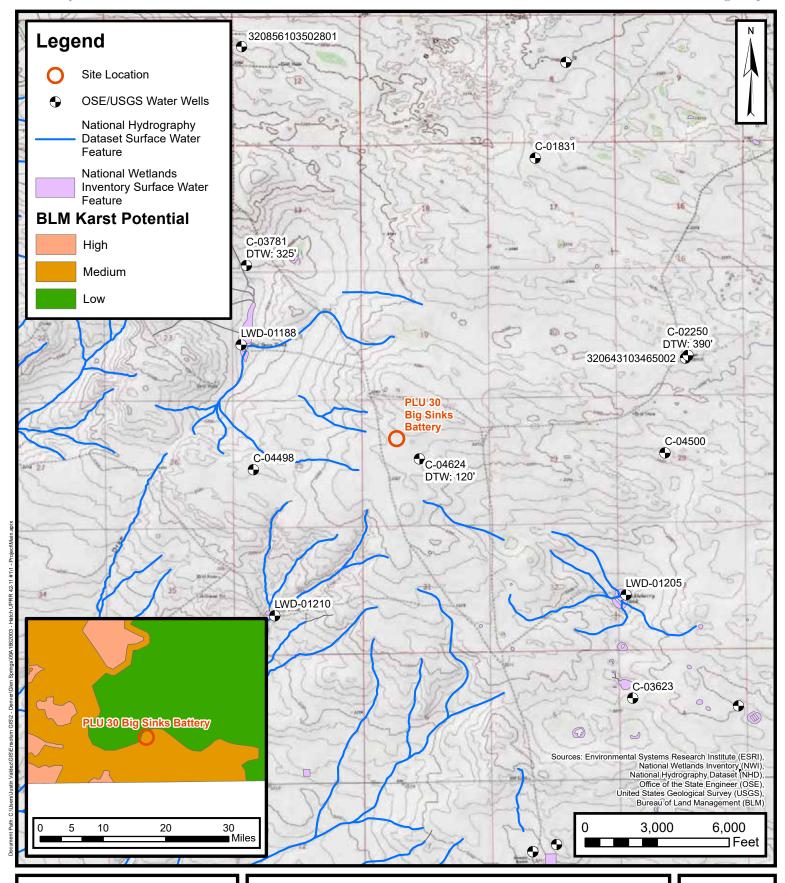
Appendix C Photographic Log

Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation





**FIGURES** 

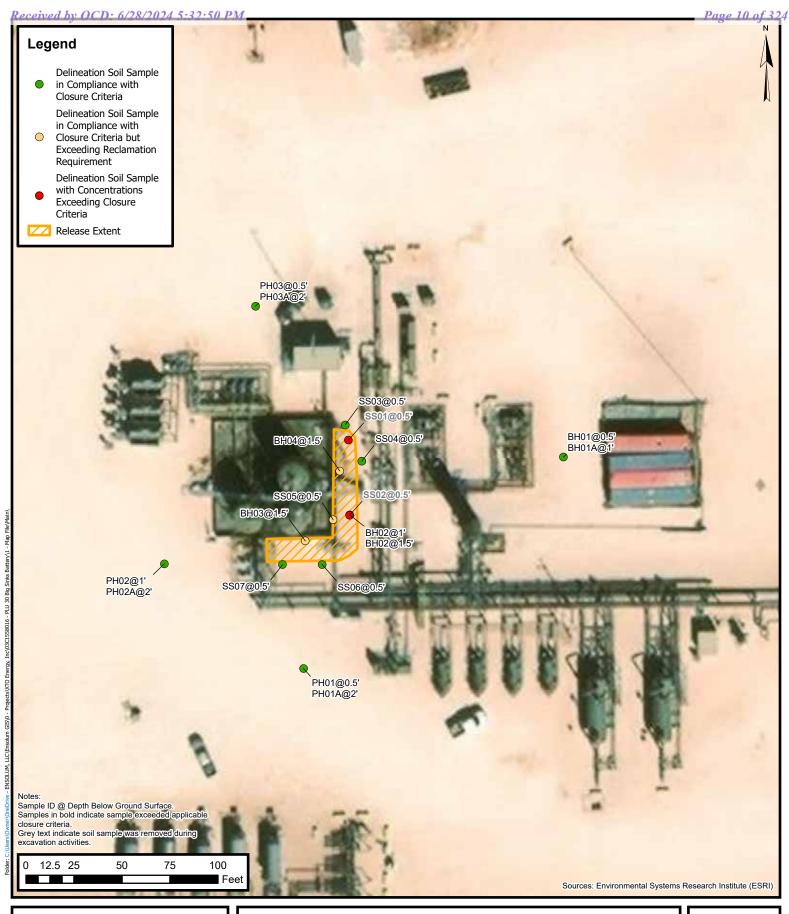




## **Site Receptor Map**

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

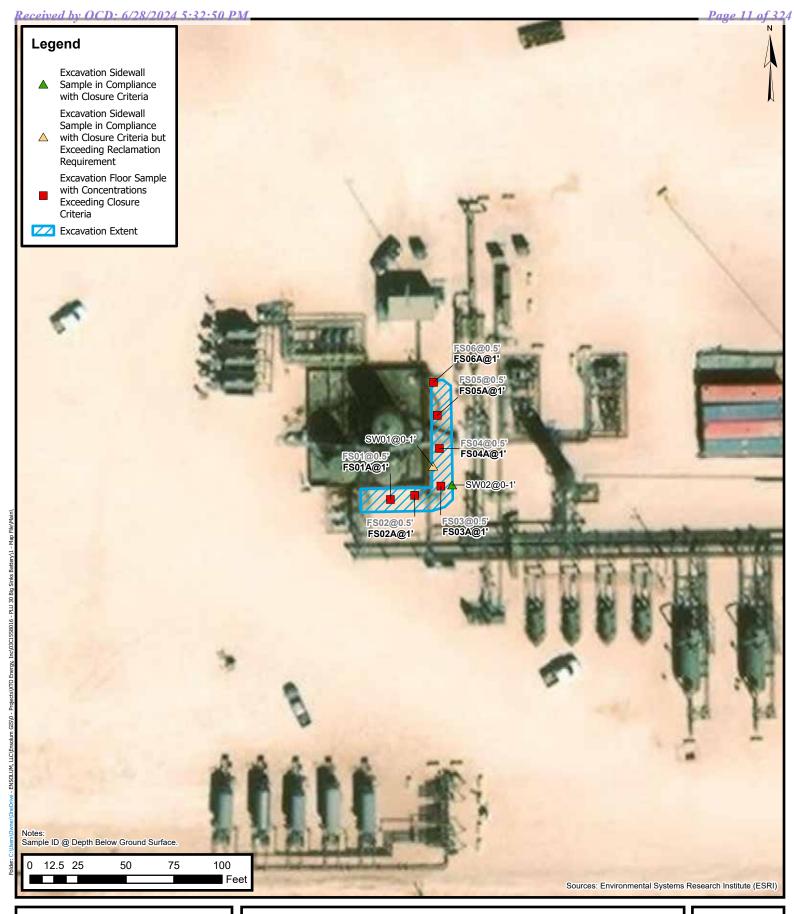
1





## **Delineation Soil Sample Locations**

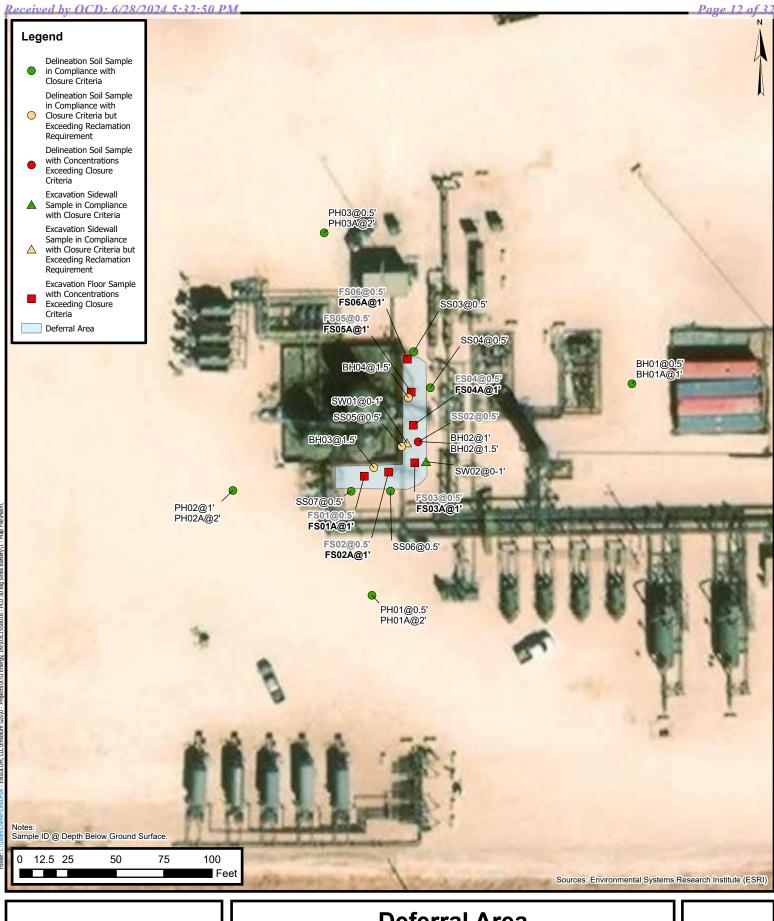
XTO Energy, Inc PLU 30 Big Sinks Battery Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico FIGURE 2





## **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





### **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



**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 C	losure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Delir	neation Soil Sa	mples				
<del>SS01</del>	04/15/2022	0.5	<0.0398	<del>158</del>	4,620	11,200	<del>&lt;250</del>	15,800	<del>15,800</del>	<del>103</del>
SS02	04/15/2022	0.5	<0.0402	157	2,060	7,820	<del>&lt;49.9</del>	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** 

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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 C	Closure Criteria (	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Confi	irmation Soil Sa	amples				
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	<del>13,600</del>	<del>15,500</del>	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	<del>2,330</del>	16,400	<del>18,800</del>	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	<del>16,000</del>	<del>&lt;250</del>	16,600	<del>16,600</del>	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

**Ensolum** 



**APPENDIX A** 

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



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

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 705 W. Wadley, Suite 210 | Midland, TX 78209 | ensolum.com Texas PG Firm No. 50588 | Texas PE Firm No. F-21843



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

Mouissey

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

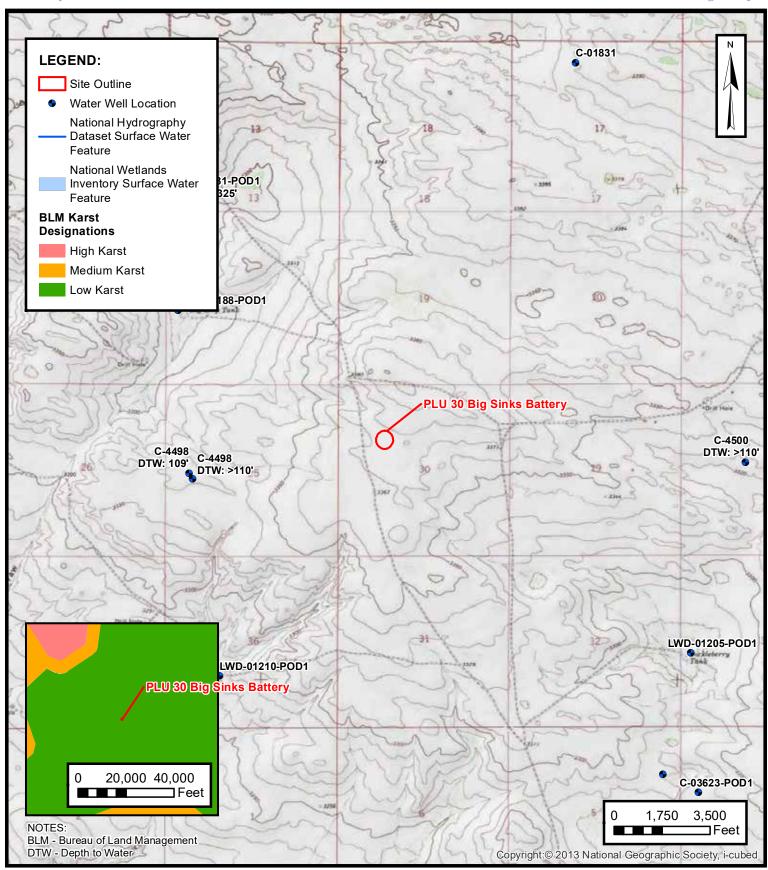
Appendix C Lithologic / Soil Sampling Logs

Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation

Appendix E NMOCD Notifications



**FIGURES** 





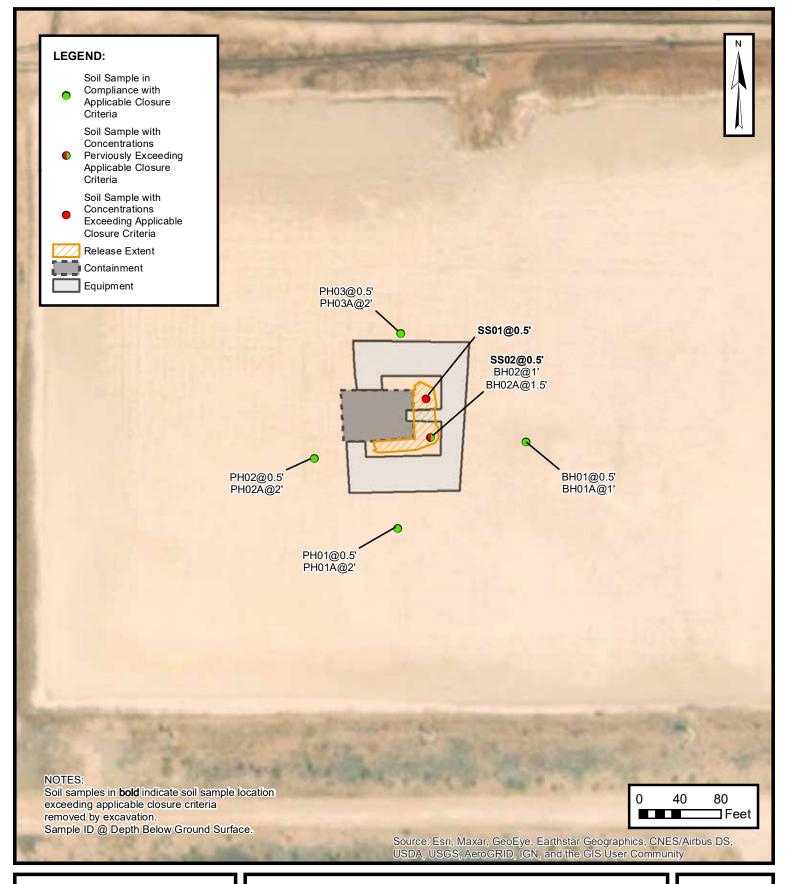
#### SITE RECEPTOR MAP

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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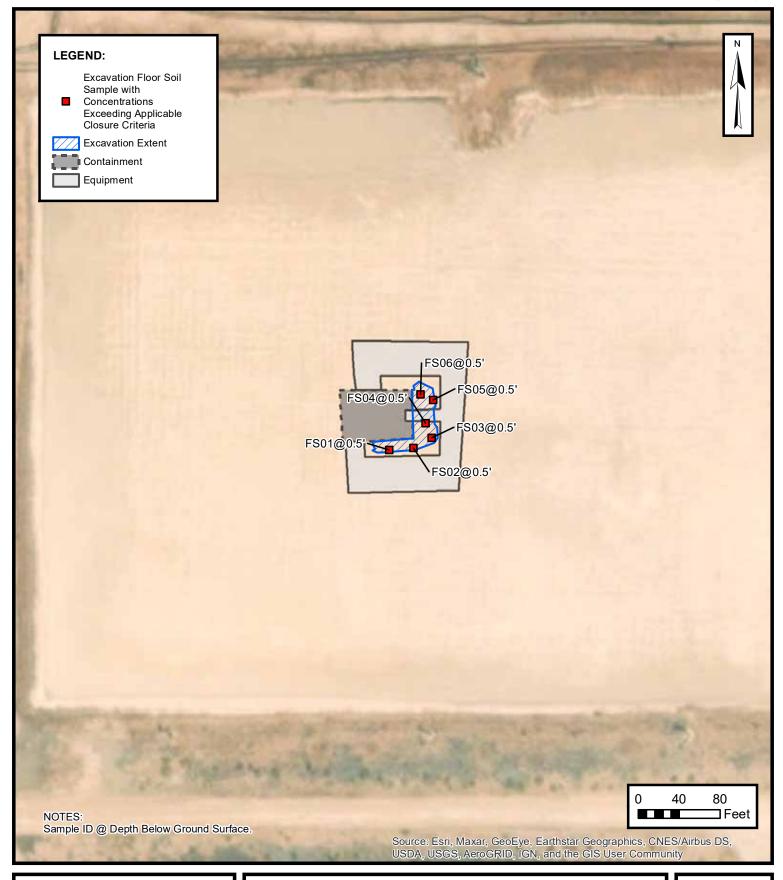


#### **SOIL SAMPLE LOCATIONS**

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

**FIGURE** 

2



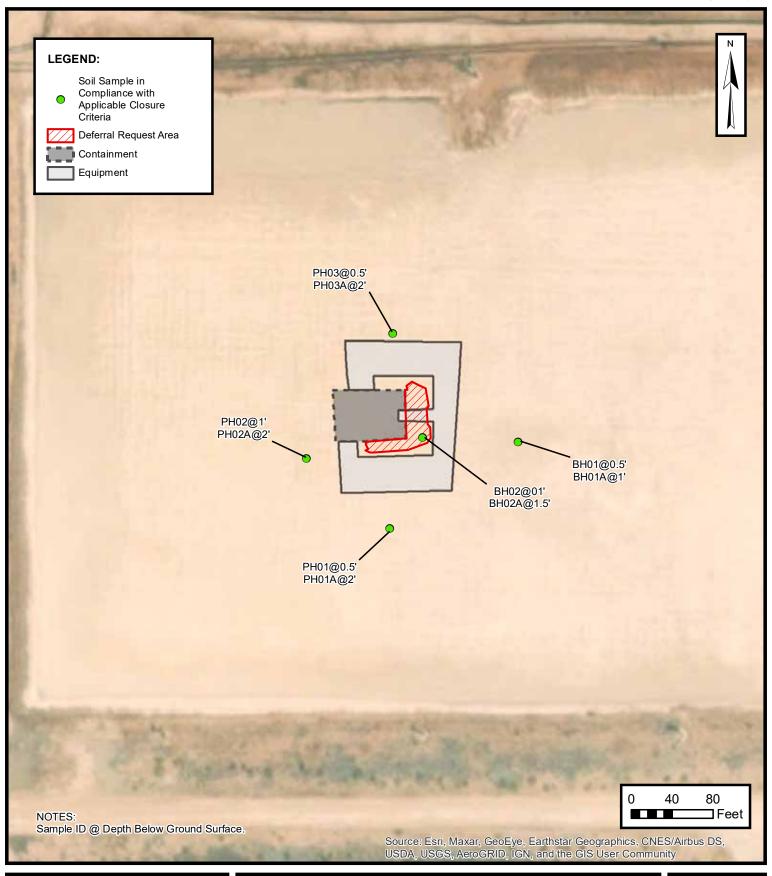


#### **EXCAVATION SOIL SAMPLE LOCATIONS**

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

**FIGURE** 

3





#### **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** 



## 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 C	losure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Pre	liminary Soil San	iples				•
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
				Del	ineation Soil San	ples				
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
				Con	firmation Soil Sa	nples				
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



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

 $\mathbf{X}$ 

NA C 04498 POD1

609394

25S 30E 3 25

3552168

**Driller License:** 1249 **Driller Company:** 

ATKINS ENGINEERING ASSOC. INC.

**Driller Name:** 

JAKCIE D ATKINS

02/24/2021

**Drill Finish Date:** 

02/24/2021

Plug Date:

03/02/2021

**Drill Start Date: 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:

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

5/17/22 12:21 PM

POINT OF DIVERSION SUMMARY



## 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)

614620

ATKINS ENGINEERING ASSOC. INC.

Well Tag **POD Number** Q64 Q16 Q4 Sec Tws Rng

 $\mathbf{X}$ 

NA C 04500 POD1 25S 31E 1 28

3552380

**Driller License:** 1249 **Driller Company: 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:

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

5/17/22 12:40 PM

POINT OF DIVERSION SUMMARY



USGS Home Contact USGS Search USGS

#### **National Water Information System: Web Interface**

USGS Water Resources	Data Category:	Geographic Area:		
bodo water resources	Groundwater ~	United States	GO	

#### Click to hideNews Bulletins

- Explore the NEW <u>USGS National Water Dashboard</u> interactive map to access realtime water <u>data</u> from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

Important: <u>Next Generation Monitoring Location Page</u>

#### 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 1307	'0001			
Latitude 32°06'46.0", Lon	gitude 103°	946'56.3" NAD83		
Land-surface elevation 3,3	74.00 feet	above NGVD29		
The depth of the well is 40	0 feet belov	w land surface.		

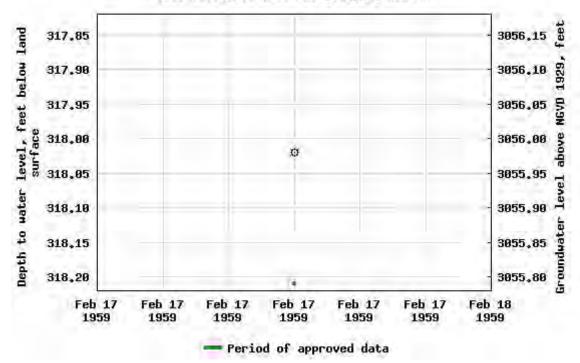
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.

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

#### USGS 320643103465002 255,31E,21,413314A



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

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

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FOIA

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Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

**Title: Groundwater for USA: Water Levels** 

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: <u>USGS Water Data Support Team</u>

Page Last Modified: 2022-05-17 14:23:51 EDT

0.54 0.49 nadww01





**APPENDIX B** 

Photographic Log



#### **Photographic Log**

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379

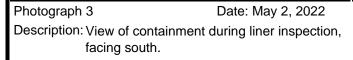


Photograph 1 Date: Apr 15, 2022
Description: View of release extent and visible staining facing north.



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







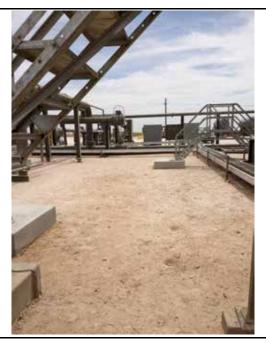
Photograph 4 Date: May 2, 2022
Description: View of containment during liner inspection, facing west.



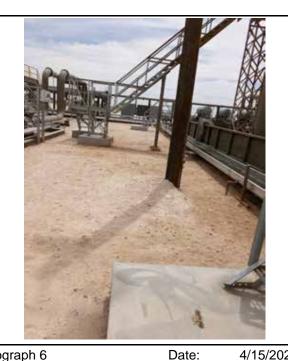
#### Photographic Log

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379



Photograph 5 Date: 4/15/2022 Photograph 6
Description: View of hand shoveled excavation extent Description: V
facing north.

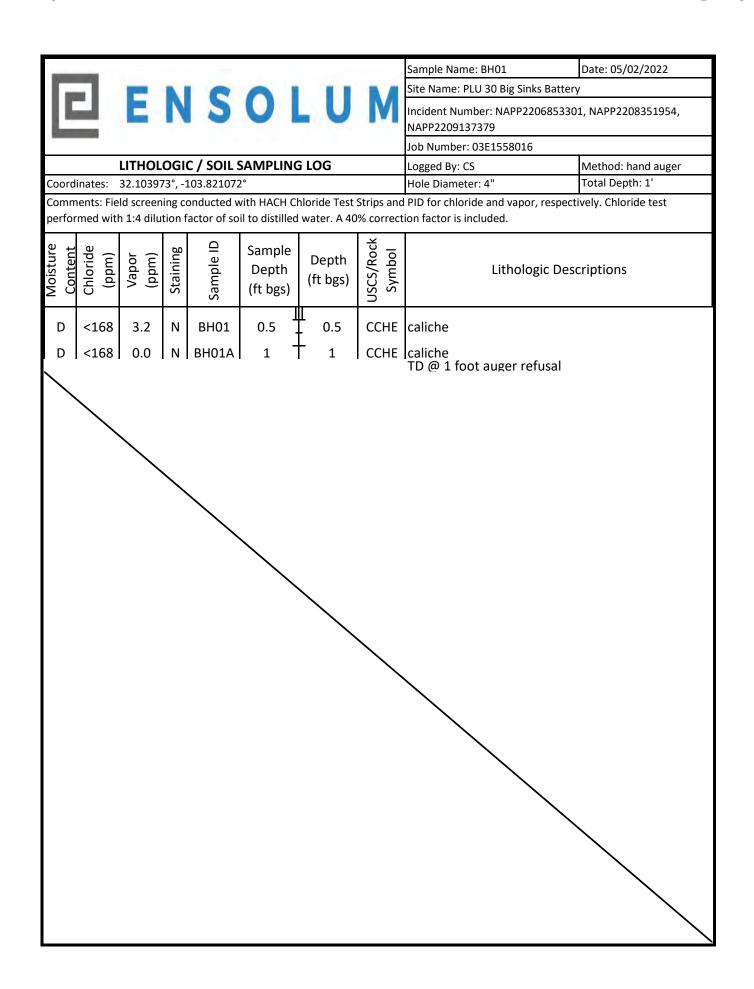


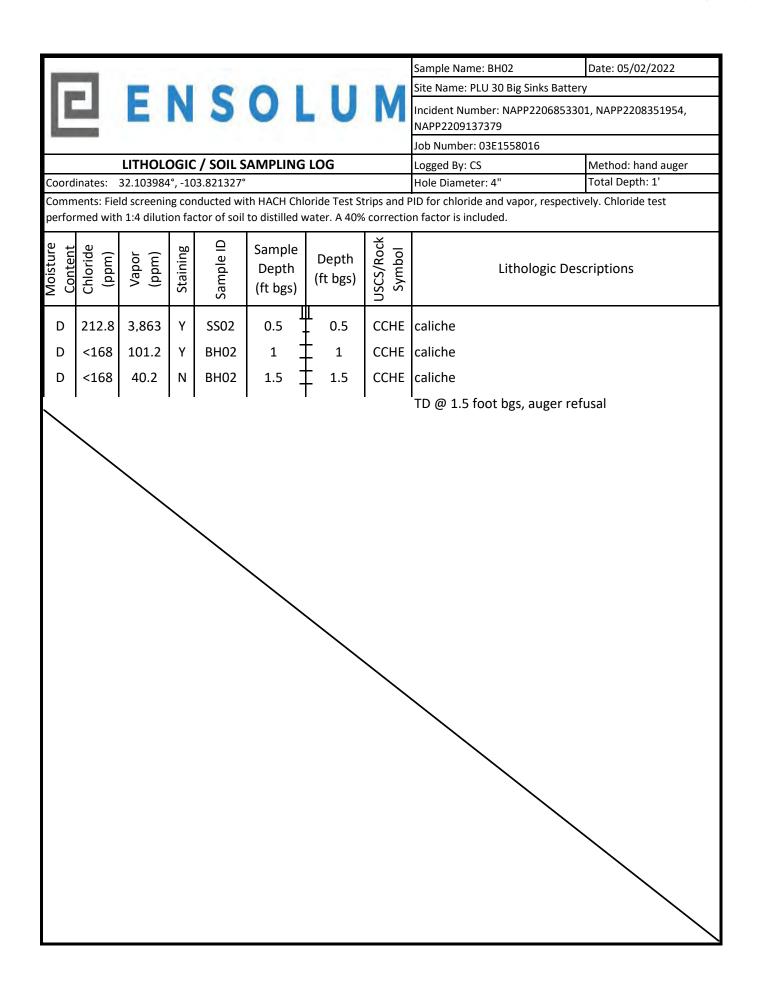
Description: View of hand shoveled excavation extent facing south.

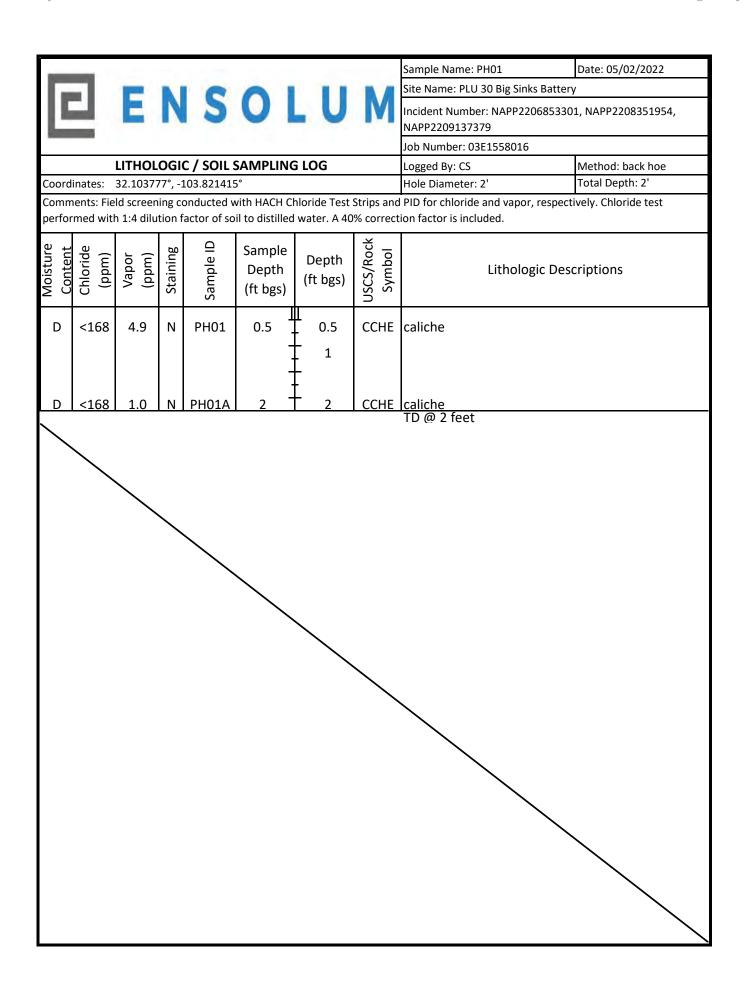


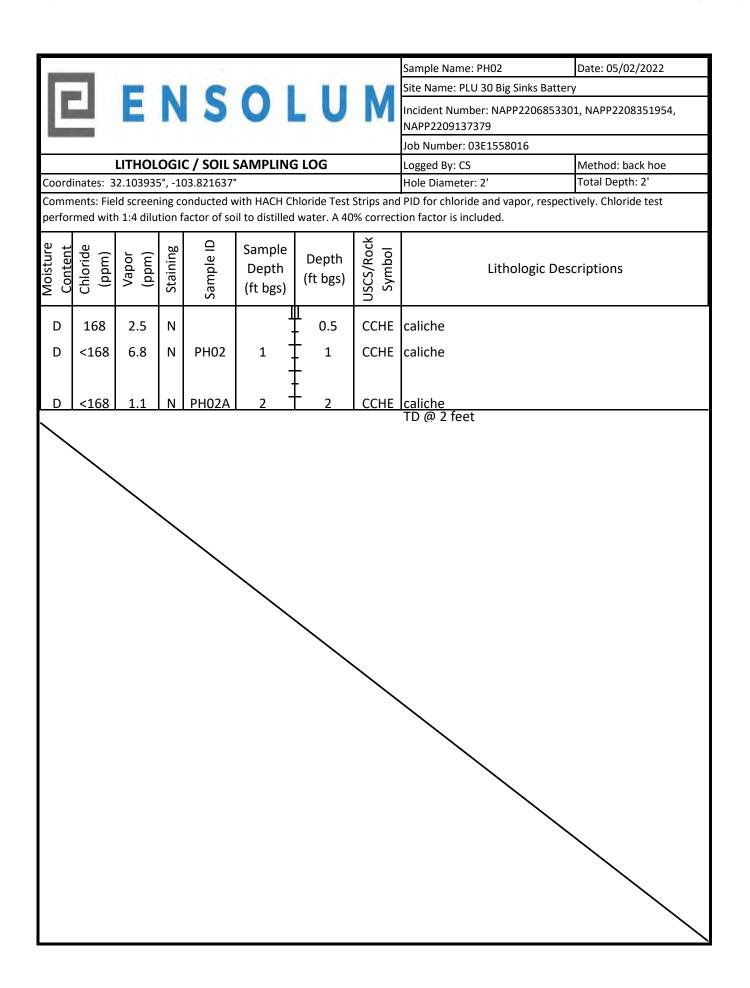
APPENDIX C

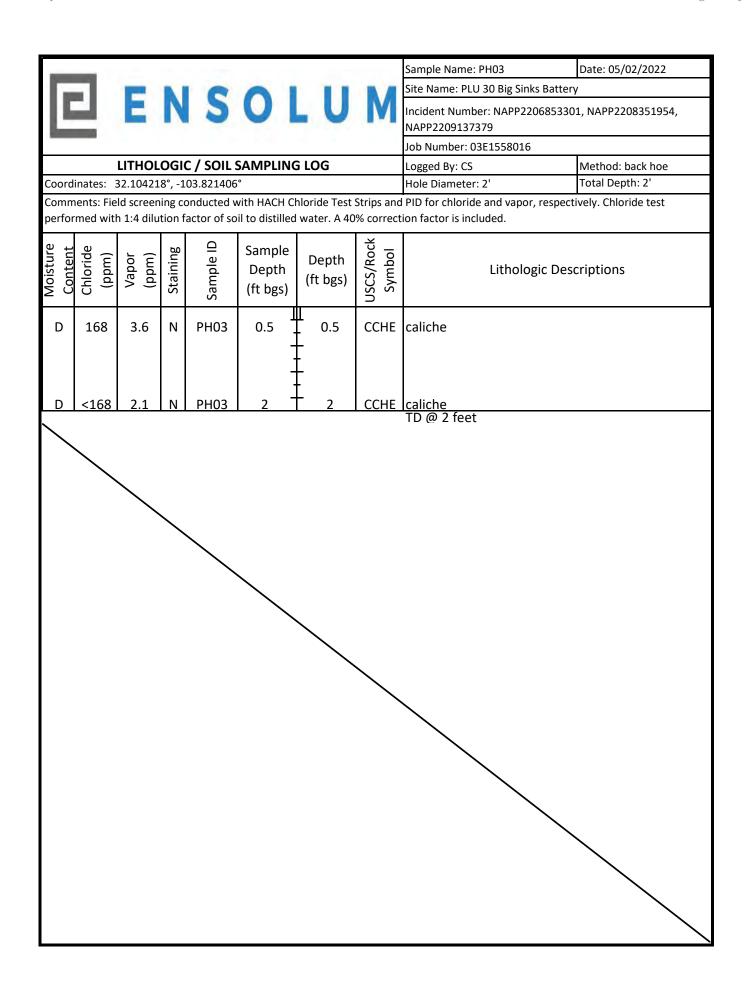
Lithologic Soil Sampling Logs













## APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



# **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

SCHAMER

Authorized for release by: 4/22/2022 12:43:15 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Review your project

results through

Have a Question?



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 7/15/2024 1:08:08 PM

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

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

1

2

3

5

7

8

10

40

13

Н

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

# **Table of Contents**

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QC Sample Results	8
QC Association Summary	16
Lab Chronicle	19
Certification Summary	20
Method Summary	21
Sample Summary	22
Chain of Custody	23
Receipt Checklists	24

### **Definitions/Glossary**

Client: Ensolum Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

Job ID: 890-2195-1

### **Qualifiers**

**GC VOA** Qualifier

*+	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

ol limits are not

applicable.

F1 MS and/or MSD recovery exceeds control limits.

F2 MS/MSD RPD exceeds control limits

**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** 

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)

Estimated Detection Limit (Dioxin) **EDL** LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCI 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

Not Calculated NC

Not Detected at the reporting limit (or MDL or EDL if shown) ND

NFG Negative / Absent POS Positive / Present

Practical Quantitation Limit PQL

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) Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

**Eurofins Carlsbad** 

3

### **Case Narrative**

Client: Ensolum

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

Job ID: 890-2195-1

Project/Site: PLU 30 BS

**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.

Matrix: Solid

Lab Sample ID: 890-2195-1

### **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2195-1

 Project/Site: PLU 30 BS
 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

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 Fa
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	•
Mathada 0045 NM - Diagal Danna	Omerica (DD	0) (00)						
Method: 8015 NM - Diesel Range	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte		Qualifier	250			Frepareu	04/20/22 15:20	DII Fac
Total TPH	15800		250	mg/Kg			04/20/22 15:20	
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (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	Ę
Diesel Range Organics (Over C10-C28)	11200		250	mg/Kg		04/19/22 10:31	04/20/22 07:29	Ę
Oll Range Organics (Over C28-C36)	<250	U	250	mg/Kg		04/19/22 10:31	04/20/22 07:29	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	231	S1+	70 - 130			04/19/22 10:31	04/20/22 07:29	
o-Terphenyl	96		70 - 130			04/19/22 10:31	04/20/22 07:29	
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: SS02

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

Sample Depth: 0.5

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

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Lab Sample ID: 890-2195-2

Matrix: Solid

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### **Client Sample Results**

Job ID: 890-2195-1 Client: Ensolum Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

**Client Sample ID: SS02** 

Lab Sample ID: 890-2195-2

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

Released to Imaging: 7/15/2024 1:08:08 PM

Matrix: Solid

Sample Depth: 0.5

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 (DR	O) (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 Rang	ge Organics (D	RO) (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 Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

### **Surrogate Summary**

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

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Sample ID	Client Sample ID	(70-130)	(70-130)	
13843-A-3-F MS	Matrix Spike	100	107	
13843-A-3-G MSD	Matrix Spike Duplicate	94	104	
13935-A-1-G MS	Matrix Spike	99	85	
13935-A-1-H MSD	Matrix Spike Duplicate	103	99	
2195-1	SS01	76	26 S1-	
2195-1 MS	SS01	24 S1-	11 S1-	
2195-1 MSD	SS01	25 S1-	2 S1-	
2195-2	SS02	94	2 S1-	
880-23784/1-A	Lab Control Sample	95	103	
880-23824/1-A	Lab Control Sample	102	108	
880-23898/1-A	Lab Control Sample	100	101	
D 880-23784/2-A	Lab Control Sample Dup	94	103	
D 880-23824/2-A	Lab Control Sample Dup	97	106	
D 880-23898/2-A	Lab Control Sample Dup	100	101	
80-23779/5-A	Method Blank	97	102	
80-23784/5-A	Method Blank	96	102	
80-23824/5-A	Method Blank	96	103	
80-23898/5-A	Method Blank	101	97	
urrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1001	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				

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

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

	MB	MB						
Analyte	Result	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

MB MB

мв мв

Surrogate	%Recovery	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	2 04/19/22 12:24	1

Lab Sample ID: MB 880-23784/5-A

**Matrix: Solid** 

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

Prep Batch: 23784

**Analysis Batch: 23768** 

Analyte	Result	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

мв мв

Surrogate	%Recovery 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

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%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	

LCS LCS

Surrogate	%Recovery 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

Analyte

Benzene

**Analysis Batch: 23768** 

Client Sample ID: Lab Control Sample Du	р
Prep Type: Total/N	A

%Rec

120

Prep Batch: 23784

%Rec		RPD
Limits	RPD	Limit
70 130	1	35

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LCSD LCSD

0.1199

Result Qualifier

Unit

mg/Kg

Spike

Added

0.100

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

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

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

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

**Client Sample ID: SS01** Lab Sample ID: 890-2195-1 MSD **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 23768** Prep Batch: 23784 %Rec MSD MSD RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Benzene <0.0398 U F1 0.0998 <0.0399 U F1 0 70 - 130 NC 35 mg/Kg Toluene 4.47 F1 0.0998 2.017 F1 mg/Kg 1797 70 - 130 35 Ethylbenzene 2.36 F1 0.0998 1.198 F1 mg/Kg 1082 70 - 130 35 0.200 4476 m-Xylene & p-Xylene 23.3 E 10.10 4 mg/Kg 70 - 130 35

0.6504 F1

mg/Kg

558

70 - 130

0.0998

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

1.87 F1

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 мв мв

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

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o-Xylene

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

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

Prep Batch: 23824

Analyte	Result	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
	МВ	MB						

мв мв

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

**Matrix: Solid** 

**Analysis Batch: 23822** 

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%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

LCS LCS

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

Lab Sample ID: LCSD 880-23824/2-A Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 23822							Prep	Batch:	23824
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	97	70 - 130
1.4-Difluorobenzene (Surr)	106	70 <sub>-</sub> 130

Lab Sample ID: 880-13843-A-3-F MS Client Sample ID: Matrix Spike

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latrix: Solid										Prep Type: Total/NA	
nalysis Batch: 23822										Prep Batch: 23824	
	Sample	Sample	Spike	MS	MS					%Rec	
nalyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	)	%Rec	Limits	

	•	-	•							
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	

Client: Ensolum

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** 

Project/Site: PLU 30 BS

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23824

MS MS Surrogate %Recovery Qualifier

Limits 4-Bromofluorobenzene (Surr) 100 70 - 130 1,4-Difluorobenzene (Surr) 107 70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23824

Lab Sample ID: 880-13843-A-3-G MSD **Matrix: Solid** 

Analysis Batch: 23822

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

MSD MSD

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

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23898

**Analysis Batch: 23883** 

**Matrix: Solid** 

Lab Sample ID: MB 880-23898/5-A

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

MR MR

Surrogate	%Recovery	Qualifier L	imits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101	70	0 - 130	04/21/22 09:32	04/21/22 11:41	1
1,4-Difluorobenzene (Surr)	97	70	0 - 130	04/21/22 09:32	04/21/22 11:41	1

Lab Sample ID: LCS 880-23898/1-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 23883** 

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

LCS LCS

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

**Eurofins Carlsbad** 

Prep Batch: 23898

Client: Ensolum

Job ID: 890-2195-1

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: LCS 880-23898/1-A

Lab Sample ID: LCSD 880-23898/2-A

**Matrix: Solid** 

**Matrix: Solid** 

**Analysis Batch: 23883** 

**Analysis Batch: 23883** 

Project/Site: PLU 30 BS

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23898

LCS LCS

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

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23898

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

Sample Sample

<0.00200 U F1 F2

<0.00200 UF1

<0.00200 UF1

<0.00399 UF1

<0.00200 UF1

85

Result Qualifier

Surrogate	%Recovery Qualific	er Limits
4-Bromofluorobenzene (Surr)	100	70 - 130
1,4-Difluorobenzene (Surr)	101	70 - 130

Lab Sample ID: 880-13935-A-1-G MS Client Sample ID: Matrix Spike

MS MS

0.01409 F1

0.01879 F1

0.01667 F1

0.03234 F1

0.01595 F1

Result Qualifier

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

Spike

Added

0.100

0.100

0.100

0.200

0.100

70 - 130

**Matrix: Solid** 

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

**Analysis Batch: 23883** 

Prep Type: Total/NA Prep Batch: 23898

%Rec Limits 70 - 130 14 19 70 - 130 17 70 - 130 70 - 130 16

70 - 130

16

%Rec

-			
	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-13935-A-1-H MSD

**Matrix: Solid** 

**Analysis Batch: 23883** 

1,4-Difluorobenzene (Surr)

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23898

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	103		70 - 130		
1,4-Difluorobenzene (Surr)	99		70 - 130		

Lab Sample ID: MB 880-23780/1-A

Lab Sample ID: LCS 880-23780/2-A

### QC Sample Results

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

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 23761

Client Sample ID: Method Blank

Prep Type: Total/NA

Analysis Batch: 23761							Prep Batcl	n: 23780
	MB	MB						
Analyte	Result	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
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/19/22 10:31	04/19/22 19:58	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared A	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

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 23780

Prep Type: Total/NA

Prep Batch: 23780

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

LCS LCS

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

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

Lab Sample ID: LCSD 880-23780/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 23761

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

LCSD LCSD

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

Lab Sample ID: 880-13850-A-21-B MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 23761

Analysis Batch: 23761									Prep B	atcn: 23/80
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	

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Prep Type: Total/NA

Project/Site: PLU 30 BS

Client: Ensolum

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 Client Sample ID: Matrix Spike

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 23761 Prep Batch: 23780

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

Lab Sample ID: 880-13850-A-21-C MSD Client Sample ID: Matrix Spike Duplicate

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

Analysis Batch: 23761 Prep Batch: 23780

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit <49 9 U 998 802 0 70 - 13020 Gasoline Range Organics mg/Kg 78 8 (GRO)-C6-C10 Diesel Range Organics (Over 998 73 <49.9 U 745.7 mg/Kg 70 - 1309 20 C10-C28)

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-23782/1-A Client Sample ID: Method Blank

**Matrix: Solid Prep Type: Soluble Analysis Batch: 23971** 

мв мв

Analysis Batch: 23971

Released to Imaging: 7/15/2024 1:08:08 PM

Analyte Result Qualifier RL Unit D Dil Fac Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 04/21/22 23:59

Lab Sample ID: LCS 880-23782/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 23971** 

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits

Chloride 250 233.1 mg/Kg 93 90 - 110

Lab Sample ID: LCSD 880-23782/3-A **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 23971** 

Spike LCSD LCSD %Rec RPD Added Analyte Result Qualifier Unit D %Rec Limits RPD Limit Chloride 250 247.0 90 - 110 mg/Kg 20

Lab Sample ID: 880-13850-A-21-E MS Client Sample ID: Matrix Spike

**Matrix: Solid Prep Type: Soluble** 

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits

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

**Eurofins Carlsbad** 

Client Sample ID: Lab Control Sample Dup

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

125

90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

7110 F1

Lab Sample ID: 880-13850-A-21-F MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 23971

Chloride

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	476	F1	252	714.8		mg/Kg		95	90 - 110	6	20

Client Sample ID: Matrix Spike Lab Sample ID: 890-2196-A-1-D MS

**Matrix: Solid Prep Type: Soluble** 

10210 F1

mg/Kg

Analysis Batch: 23971

Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits

2480

Lab Sample ID: 890-2196-A-1-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 23971

MSD MSD %Rec RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit Limits **RPD** Limit 7110 F1 2480 9834 90 - 110 20 Chloride mg/Kg 110

### **QC Association Summary**

 Client: Ensolum
 Job ID: 890-2195-1

 Project/Site: PLU 30 BS
 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

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### **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	

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### 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
 Job ID: 890-2195-1

 Project/Site: PLU 30 BS
 SDG: 03E1558019 03E1558020 03E1558022

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### **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	

4

### 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

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13

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### **Lab Chronicle**

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

**Client Sample ID: SS01** 

Lab Sample ID: 890-2195-1

Matrix: Solid

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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	СН	XEN MID

**Client Sample ID: SS02** Lab Sample ID: 890-2195-2

Date Collected: 04/15/22 11:05 Matrix: Solid

Date Received: 04/15/22 15:41

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

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 Pro		ogram	Identification Number	<b>Expiration Date</b>	
Texas	NE	ELAP	T104704400-21-22	06-30-22	
The following analytes					
the agency does not of	• •	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for	
0 ,	• •	it the laboratory is not certifi  Matrix	ed by the governing authority. This list ma	ay include analytes for	
the agency does not of	fer certification.	•	, , ,	ay include analytes for	

### **Method Summary**

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

Method **Method Description** Protocol Laboratory 8021B Volatile Organic Compounds (GC) SW846 XEN MID **Total BTEX Calculation** TAL SOP XEN MID Total BTEX 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 SW846 XEN MID Closed System Purge and Trap 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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Environment Testing

# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334

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Project Manager: Tacoma Morrissey Company Name: Ensolum LLC Address:	rissey	Bill to: (if different) Company Name:		Adrian Baker XTO Energy, Inc.		Work Order Comments	Comments
	0	Company Na		(TO Energy, Inc.	0	TOTAL TOTAL DESCRIPTION DOWN	1
					Roll	Tam: USI/PSI PRP DIOWI	Program: UST/PST   PRP   Brownfields   RRC   Superfund
	THE RESERVE THE PROPERTY OF THE PARTY OF THE	Address:	ω	3104 E. Green Street		State of Project:	
City, State ZIP:	- 10 Contract of the Contract	City, State ZIP:		Carlsbad, NM 88220		Reporting: Level II   Level III   PST/UST   TRRP	T/UST TRRP Level IV
Phone: 337.257.8307	7	Email: bbefill@ensolum.com	solum.com		Deliv	Deliverables: EDD	T Other:
Name:	PLU 30 BS	Turn Around			ANALYSIS REQUEST		Preservative Codes
er.	03E1558022	☑ Routine ☐ Rush	Code				None: NO DI Water: H <sub>2</sub> O
		Due Date:					Coal: Coal MeOH: Me
	1000	TAT starts the day received by	by				HCL: HC HNO3: HN
		the lab, if received by 4:30pm	22.				H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na
PLE RECEIPT 1	Blank: (Yes) No	Wet los: Yes No	nete	.0)			H <sub>3</sub> PO <sub>4</sub> : HP
Samples Received Intact: Yes	No Thermometer ID:	PMI		300			NaHSO <sub>4</sub> : NABIS
Yes	ONA	tor: -0,2	i i	PA:			Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>
	No NIA Temperature Reading:	Reading: 3.4	L	()	890-2180 Cultural or Cristoch	Custody	Zn Acetate+NaOH: Zn
	Corrected Temperature:	nperature: 3.2		015)			NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix Date Sampled	Time Depth Co	Grab/ # of Comp Cont	TPH (8 BTEX (			Sample Comments
SS01	s 4/15/2022	1100 0.5'	9 1	×			A STATE OF THE PARTY OF THE PAR
SS02		0.5'	9 1	×			
St. 13							
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed		8RCRA 13PPM Texas	8 11 AI St 8RCRA S	As Ba Be B	)RA 13PPM Texas 11 AIS bAs Ba Be BCdCaCrCoCuFePbMgMnMoNi TCLP/SPLP6010:8RCRAS bAs BaBeCdCrCoCuPbMnMoNiSeAgTIU	K Se A	lg SiO <sub>2</sub> Na Sr Tl Sn U V Zn 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 subcont 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 is a fear the sample submitted to Eurofins Xenco, but not analyzed. These	linquishment of samples consti- nly for the cost of samples and i	tutes a valid purchase order shall not assume any respon rolect and a charge of \$5 for r	from client con sibility for any each sample s	mpany to Eurofins Xe riosses or expenses ubmitted to Eurofins	nature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofine Xenco, its affiliates and subcontractors. It assigns standard terms and conditions  Eurofine 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  Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofine Xenco, but not analyzed. These terms will be enforced unless previously negotiat	ractors. It assigns standard terms and conditions osses are due to circumstances beyond the control a terms will be enforced unless previously nagotiated.	
Relinquished by: (Signature)	Received	Received by: (Signature)		Date/Time	Relinquished by: (Signature)	Received by: (Signature)	re) Date/Time
	( Year On)	,	4.16	(HS1 EC.9)	2		
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### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2195-1

SDG Number: 03E1558019 03E1558020 03E1558022

Login Number: 2195 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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	

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### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2195-1

SDG Number: 03E1558019 03E1558020 03E1558022

Login Number: 2195 **List Source: Eurofins Midland** List Number: 2 List Creation: 04/19/22 11:38 AM

Creator: Rodriguez, Leticia

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	



# **Environment Testing America**

# **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

RAMER

Authorized for release by: 5/13/2022 9:43:20 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS .....

**Review your project** results through

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Released to Imaging: 7/15/2024 1:08:08 PM

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

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### **Definitions/Glossary**

Job ID: 890-2267-1 Client: Ensolum 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 Description** LCS and/or LCSD is outside acceptance limits, high biased.

\*1 LCS/LCSD RPD exceeds control limits.

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

MCL

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**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.

**Eurofins Carlsbad** 5/13/2022

Lab Sample ID: 890-2267-1

## **Client Sample Results**

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

**Client Sample ID: PH01** 

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

Sample Depth: 0.5'

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	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Method: 8015 NM - Diesel Range Analyte		O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
_		Qualifier	<b>RL</b> 50.0	<b>Unit</b> mg/Kg	D	Prepared	<b>Analyzed</b> 05/09/22 11:48	
Analyte Total TPH	Result <50.0	Qualifier U			D	Prepared		
Analyte Total TPH	Result <50.0  ge Organics (Di	Qualifier U RO) (GC) Qualifier			D_	Prepared Prepared		1
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	Result <50.0  ge Organics (Di	Qualifier U RO) (GC)	50.0	mg/Kg			05/09/22 11:48	1 Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <50.0  ge Organics (Di	Qualifier U  RO) (GC) Qualifier U *+ *1	50.0	mg/Kg <b>Unit</b>		Prepared	05/09/22 11:48  Analyzed	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10	Result <50.0  ge Organics (Dige Result <50.0	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	50.0 RL 50.0	mg/Kg  Unit  mg/Kg		Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 12:01	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <50.0  ge Organics (Dige Result <50.0 <p>&lt;50.0</p>	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	50.0 RL 50.0 50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 12:01 05/05/22 12:01	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <50.0	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	50.0  RL  50.0  50.0  50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 12:01 05/05/22 12:01	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result <50.0  ge Organics (Di Result <50.0 <50.0 <50.0  %Recovery	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	50.0  RL 50.0  50.0  50.0  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21 05/04/22 15:21 Prepared	05/09/22 11:48  Analyzed 05/05/22 12:01 05/05/22 12:01 05/05/22 12:01  Analyzed	Dil Face 1 1 1 Dil Face 1
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result   <50.0	Qualifier U  RO) (GC) Qualifier U*+*1 U*1 U  Qualifier	50.0  RL 50.0  50.0  50.0  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21 05/04/22 15:21  Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 12:01 05/05/22 12:01  Analyzed 05/05/22 12:01	Dil Fac  1  1  Dil Fac  1
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result <50.0  ge Organics (D) Result <50.0 <50.0 <50.0  %Recovery 106 104  omatography -	Qualifier U  RO) (GC) Qualifier U*+*1 U*1 U  Qualifier	50.0  RL 50.0  50.0  50.0  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21 05/04/22 15:21  Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 12:01 05/05/22 12:01  Analyzed 05/05/22 12:01	Dil Fac  Dil Fac  1  Dil Fac  1  Dil Fac  1  Dil Fac

Client Sample ID: PH01A Lab Sample ID: 890-2267-2 Date Collected: 05/02/22 13:40 Matrix: Solid

Date Received: 05/03/22 08:13

Sample Depth: 2'

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

Lab Sample ID: 890-2267-2

05/04/22 15:21

05/04/22 15:21

05/05/22 13:02 05/05/22 13:02

**Matrix: Solid** 

## **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

Client Sample ID: PH01A

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

Sample Depth: 2'

Method: 8021B - Volatile	Organic	Compound	ds (GC)	(Continued)
moniour cozinz	o game	- Compount	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	( Continuou)

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 RTFY	- Total BTEX	Calculation
Metilou.	TOTAL DIEN	- IUlai DILA	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

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
Oll 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
o-Terphenyl	109	70 - 130

Method: 300.0 - Anions, Ion Chromatography - Soluble								
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chlorida	17.0	5.02	ma/Ka			05/05/22 23:38	1	

Client Sample ID: PH02 Lab Sample ID: 890-2267-3

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

Sample Depth: 1'

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

Michiga. 002 ID - Volatile Orga	inc compounds	(30)						
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 Qualit	fier RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398 U	0.00398	mg/Kg			05/13/22 10:27	1

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

**Eurofins Carlsbad** 

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## **Client Sample Results**

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

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
Oll 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 Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Allalyte								

Client Sample ID: PH02A Lab Sample ID: 890-2267-4 Date Collected: 05/02/22 13:40 Matrix: Solid

Date Received: 05/03/22 08:13

Sample Depth: 2'

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
	40.00000						05/40/00 40 07	
Total BTEX	< 0.00399	U	0.00399	mg/Kg			05/13/22 10:27	1
			0.00399	mg/Kg			05/13/22 10:27	1
	Organics (DR	O) (GC)						
Total BTEX : 	Organics (DRO	O) (GC) Qualifier	0.00399	mg/Kg Unit	D	Prepared	05/13/22 10:27  Analyzed	Dil Fac
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC) Qualifier			D	Prepared		
Method: 8015 NM - Diesel Range Analyte Total TPH	e Organics (DR) Result <49.9	O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte	e Organics (DR) Result <49.9 ge Organics (DI)	O) (GC) Qualifier	RL	Unit	<u>D</u>	Prepared Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	e Organics (DR) Result <49.9 ge Organics (DI) Result	Qualifier U	<b>RL</b> 49.9	<b>Unit</b> mg/Kg			Analyzed 05/09/22 11:48	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10	e Organics (DR) Result <49.9 ge Organics (DI) Result	Qualifier U  RO) (GC) Qualifier U *+ *1	RL 49.9	Unit mg/Kg Unit		Prepared	Analyzed 05/09/22 11:48  Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10	e Organics (DR) Result <49.9  ge Organics (DI) Result <49.9	Qualifier U  RO) (GC) Qualifier U *+ *1	RL 49.9 RL 49.9	Unit mg/Kg  Unit mg/Kg		Prepared 05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 13:43	Dil Fac  Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	e Organics (DR) Result <49.9  ge Organics (DI) Result <49.9	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	RL 49.9 RL 49.9	Unit mg/Kg  Unit mg/Kg		Prepared 05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 13:43	Dil Fac  Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	e Organics (DR) Result <49.9  ge Organics (DI) Result <49.9 <49.9	Qualifier U  RO) (GC) Qualifier U*+*1 U*1	RL 49.9 RL 49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 13:43 05/05/22 13:43	Dil Fac  Dil Fac  1
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	e Organics (DRI Result <49.9 ge Organics (DI Result <49.9 <49.9	Qualifier U  RO) (GC) Qualifier U*+*1 U*1	RL 49.9 RL 49.9 49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 13:43 05/05/22 13:43	Dil Fac  Dil Fac  1  1

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Released to Imaging: 7/15/2024 1:08:08 PM

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

Lab Sample ID: 890-2267-4

**Client Sample ID: PH02A** 

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

Sample Depth: 2'

Method: 300.0 - Anions, Ion Chr	omatography - 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'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	
Toluene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	
m-Xylene & p-Xylene	< 0.00396	U	0.00396	mg/Kg		05/10/22 13:49	05/13/22 00:23	
o-Xylene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		05/10/22 13:49	05/13/22 00:23	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	90		70 - 130			05/10/22 13:49	05/13/22 00:23	
1,4-Difluorobenzene (Surr)	103		70 - 130			05/10/22 13:49	05/13/22 00:23	
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00396	U	0.00396	mg/Kg			05/13/22 10:27	•
Method: 8015 NM - Diesel Range			D.	11-4		Danagad	Amakanad	D:: F-
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	<50.0	U	50.0	mg/Kg			05/09/22 11:48	
Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+ *1	50.0	mg/Kg		05/04/22 15:21	05/05/22 14:04	
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0	mg/Kg		05/04/22 15:21	05/05/22 14:04	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 14:04	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	97		70 - 130			05/04/22 15:21	05/05/22 14:04	
o-Terphenyl	102		70 - 130			05/04/22 15:21	05/05/22 14:04	
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	36.9		5.03	mg/Kg			05/06/22 11:38	

Lab Sample ID: 890-2267-6

## **Client Sample Results**

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

**Client Sample ID: PH03A** 

Date Collected: 05/02/22 14:35 Date Received: 05/03/22 08:13

Sample Depth: 2'

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	
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/10/22 13:49	05/13/22 00:44	
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	98		70 - 130			05/10/22 13:49	05/13/22 00:44	
1,4-Difluorobenzene (Surr)	105		70 - 130			05/10/22 13:49	05/13/22 00:44	
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00401	U	0.00401	mg/Kg			05/13/22 10:27	
Analyte Total TPH		Qualifier	RL	Unit ma/Ka	D	Prepared	Analyzed	Dil Fa
Total TPH	<49.9		49.9	mg/Kg		Prepared	05/09/22 11:48	DII Fa
				3 3				
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:26	•
(GRO)-C6-C10								
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:26	
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:26	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	111		70 - 130			05/04/22 15:21	05/05/22 14:26	
o-Terphenyl	113		70 - 130			05/04/22 15:21	05/05/22 14:26	
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Amaluta	Pocult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	Qualifici	IXL	Oilit		riepaieu	Analyzou	Diria

**Client Sample ID: BH01** Lab Sample ID: 890-2267-7

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

Sample Depth: 0.5'

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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Matrix: Solid

5/13/2022

Lab Sample ID: 890-2267-7

Job ID: 890-2267-1

05/04/22 15:21

05/04/22 15:21

05/05/22 14:47

05/05/22 14:47

Client: Ensolum Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

**Client Sample ID: BH01** 

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

Sample Depth: 0.5'

Method: 8021B - Volatile	<b>Organic Compoun</b>	ds (GC) (Continued)
Michigal Corrid	Organio Compoun	ao (oo) (oontinada)

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

			<b>-</b>
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	Prepare	ed Analyzed	Dil Fac
Total TPH		<49.9	U	49.9		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
Oll 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

Surroyate	Mecovery Qualifier	Liiiits
1-Chlorooctane	92	70 - 130
o-Terphenyl	93	70 - 130

o-Terphenyl	93	70 - 130

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 Lab Sample ID: 890-2267-8 Date Collected: 05/02/22 14:40 **Matrix: Solid** 

Date Received: 05/03/22 08:13

Sample Depth: 1'

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

	/						
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
110		70 - 130			05/10/22 13:49	05/13/22 01:26	1
100		70 - 130			05/10/22 13:49	05/13/22 01:26	1
	Result <0.00200 <0.00200 <0.00200 <0.00399 <0.00200 <0.00399  %Recovery		Result         Qualifier         RL           <0.00200	Result         Qualifier         RL         Unit           <0.00200	Result         Qualifier         RL         Unit         D           <0.00200	Result         Qualifier         RL         Unit         D         Prepared           <0.00200	Result         Qualifier         RL         Unit         D         Prepared         Analyzed           <0.00200

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

Analyte	Result 0	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			05/13/22 10:27	1

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

Lab Sample ID: 890-2267-8

## **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

Client Sample ID: BH01A

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

Sample Depth: 1'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 15:08	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 15:08	1
C10-C28)								
OII 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 Chro	omatography -	Soluble						
Michiga, 300.0 - Allions, Ion Oliv								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: BH02

Date Collected: 05/02/22 13:17

Lab Sample ID: 890-2267-9

Matrix: Solid

Date Received: 05/03/22 08:13

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Sample Depth: 1'

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 (DR	O) (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 Rang	e Organics (D	RO) (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
Oll 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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Lab Sample ID: 890-2267-9

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

Client Sample ID: BH02

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

Sample Depth: 1'

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 Lab Sample ID: 890-2267-10 **Matrix: Solid** 

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

Method: 8021B - Volatile Orga	nic Compounds (	(GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	
m-Xylene & p-Xylene	< 0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 02:07	
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 02:07	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	101		70 - 130			05/10/22 13:49	05/13/22 02:07	
1,4-Difluorobenzene (Surr)	106		70 - 130			05/10/22 13:49	05/13/22 02:07	
Method: Total BTEX - Total B1	TEX Calculation							
Analyte								
Allalyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	Result < 0.00399		<b>RL</b> 0.00399	Unit mg/Kg	D	Prepared	<b>Analyzed</b> 05/13/22 10:27	Dil Fa
Total BTEX	<0.00399	U			D	Prepared		Dil Fa
<del>-</del>	<0.00399	U			<u>D</u>	Prepared Prepared		
Total BTEX  Method: 8015 NM - Diesel Rar Analyte	<0.00399	U (GC)	0.00399	mg/Kg	=		05/13/22 10:27	Dil Fa
Total BTEX  Method: 8015 NM - Diesel Rar	<0.00399  nge Organics (DR  Result  489	O) (GC) Qualifier	0.00399 <b>RL</b>	mg/Kg <b>Unit</b>	=		05/13/22 10:27  Analyzed	Dil Fa
Total BTEX  Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ra	<0.00399  nge Organics (DR Result 489  ange Organics (D	O) (GC) Qualifier	0.00399 <b>RL</b>	mg/Kg <b>Unit</b>	=		05/13/22 10:27  Analyzed	Dil Fa
Total BTEX  Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ra Analyte Gasoline Range Organics	<0.00399  nge Organics (DR Result 489  ange Organics (D Result	O) (GC) Qualifier  RO) (GC)	0.00399 RL 49.9	mg/Kg  Unit  mg/Kg	D	Prepared	05/13/22 10:27  Analyzed  05/09/22 11:48	Dil Fa
Total BTEX  Method: 8015 NM - Diesel Rar Analyte Total TPH	<0.00399  nge Organics (DR Result 489  ange Organics (D Result	O) (GC) Qualifier  RO) (GC) Qualifier U *+ *1	0.00399 RL 49.9	mg/Kg  Unit  mg/Kg  Unit	D	Prepared Prepared	05/13/22 10:27  Analyzed 05/09/22 11:48  Analyzed	Dil Fa

49.9

RL

5.03

Limits

70 - 130

70 - 130

mg/Kg

Unit

mg/Kg

60.9

%Recovery Qualifier

Result Qualifier

103

104

26.2

Method: 300.0 - Anions, Ion Chromatography - Soluble

**Eurofins Carlsbad** 

05/04/22 15:21

Prepared

05/04/22 15:21

05/04/22 15:21

Prepared

D

05/05/22 15:50

Analyzed

05/05/22 15:50

05/05/22 15:50

Analyzed

05/06/22 01:10

**Oll Range Organics (Over** 

C28-C36)

Surrogate

o-Terphenyl

Analyte

Chloride

1-Chlorooctane

Dil Fac

Dil Fac

## **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits
		BFB1	DFBZ1	
b Sample ID	Client Sample ID	(70-130)	(70-130)	
80-14390-A-4-E MS	Matrix Spike	114	98	
80-14390-A-4-F MSD	Matrix Spike Duplicate	92	106	
0-2267-1	PH01	103	108	
0-2267-2	PH01A	99	106	
00-2267-3	PH02	97	102	
00-2267-4	PH02A	96	107	
00-2267-5	PH03	90	103	
0-2267-6	PH03A	98	105	
00-2267-7	BH01	108	105	
0-2267-8	BH01A	110	100	
0-2267-9	BH02	107	106	
0-2267-10	BH02	101	106	
CS 880-25279/1-A	Lab Control Sample	105	104	
CSD 880-25279/2-A	Lab Control Sample Dup	105	102	
B 880-25279/5-A	Method Blank	93	98	
Surrogate Legend				
BFB = 4-Bromofluorobenze	ene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

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	
390-2267-2	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	
390-2267-10	BH02	103	104	
LCS 880-24835/2-A	Lab Control Sample	121	119	
_CSD 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				

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

	MB	MB						
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 19:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 19:31	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 19:31	
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	,

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93	70 - 130	05/10/22 13:49	5/12/22 19:31	1
1,4-Difluorobenzene (Surr)	98	70 - 130	05/10/22 13:49 0	5/12/22 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

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

LCS LCS

Surrogate	%Recovery (	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

Prep Type: Total/NA

Prep Batch: 25279

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	

LCSD LCSD

Surrogate	%Recovery C	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

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	

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

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

Lab Sample ID: 880-14390-A-4-E MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 25476 Prep Batch: 25279 Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Unit %Rec Limits Analyte <0.00200 U 0.0998 Ethylbenzene 0.07910 mg/Kg 79 70 - 130

m-Xylene & p-Xylene <0.00401 0.200 0 1707 mg/Kg 86 70 - 130 <0.00200 U 0.0998 0.08545 86 70 - 130 o-Xylene mg/Kg

MS MS

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

Lab Sample ID: 880-14390-A-4-F MSD

**Matrix: Solid** 

Analysis Batch: 25476

Prep Batch: 25279 Sample Sample Spike MSD MSD RPD RPD Result Qualifier Added Result Qualifier Unit %Rec Limits Limit Analyte Benzene <0.00200 UF1 0.0994 0.08395 mg/Kg 84 70 - 130 25 35 Toluene <0.00200 0.0994 0.07509 mg/Kg 76 70 - 130 5 35 <0.00200 0.0994 0.07445 75 70 - 130 6 35 Ethylbenzene U mg/Kg 75 m-Xylene & p-Xylene < 0.00401 U 0.199 0.1499 mg/Kg 70 - 130 13 35

0.07442

0.0994

MSD MSD

<0.00200 U

Qualifier Limits Surrogate %Recovery 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** 

o-Xylene

Analysis Batch: 24860

мв мв Result Qualifier RL Unit D Prepared Dil Fac Analyte Analyzed 50.0 05/04/22 15:21 05/05/22 11:00 Gasoline Range Organics <50.0 U mg/Kg (GRO)-C6-C10 05/04/22 15:21 05/05/22 11:00 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 05/04/22 15:21 05/05/22 11:00 mg/Kg

MB MB

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

Lab Sample ID: LCS 880-24835/2-A

**Matrix: Solid** 

Prep Type: Total/NA Analysis Batch: 24860 Prep Batch: 24835 LCS LCS %Rec Spike

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

**Eurofins Carlsbad** 

Client Sample ID: Matrix Spike Duplicate

70 - 130

Client Sample ID: Lab Control Sample

75

mg/Kg

Prep Type: Total/NA

14

Prep Type: Total/NA

Prep Batch: 24835

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

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

LCS LCS %Recovery Qualifier

Lab Sample ID: LCS 880-24835/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Analysis Batch: 24860

Surrogate

Prep Type: Total/NA

Prep Batch: 24835

1-Chlorooctane 121 70 - 130 o-Terphenyl 119 70 - 130

Lab Sample ID: LCSD 880-24835/3-A Client Sample ID: Lab Control Sample Dup

Limits

**Matrix: Solid** 

Analysis Batch: 24860

Prep Type: Total/NA

Prep Batch: 24835

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

LCSD LCSD

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

Lab Sample ID: 890-2267-1 MS **Client Sample ID: PH01** 

**Matrix: Solid** 

Analysis Batch: 24860

Prep Type: Total/NA

Prep Batch: 24835

%Rec

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

C10-C28)

MS MS

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

Lab Sample ID: 890-2267-1 MSD Client Sample ID: PH01 **Matrix: Solid** 

Prep Type: Total/NA

Analysis Batch: 24860

Prep Batch: 24835

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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	<50.0	U *1	998	767.7		mg/Kg		75	70 - 130	2	20	

C10-C28)

MSD MSD

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

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

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-24815/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 24888** 

	MB	MB						
Analyte	Result	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 **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 24888** 

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

Lab Sample ID: LCSD 880-24815/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 24888** 

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	252.2	mg/Kg		101	90 - 110	1	20

Lab Sample ID: 890-2267-1 MS **Client Sample ID: PH01 Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 24888** 

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

Lab Sample ID: 890-2267-1 MSD **Client Sample ID: PH01 Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 24888

	Sample Samp	le Spike	MSD	MSD				%Rec		RPD
Analyte	Result Qualit	ier Added	Result	Qualifier	Unit	D	%Rec	Limits	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	

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# **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 Batc
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 Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB 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

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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	СН	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** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

Lab Sample ID: 890-2267-5 **Client Sample ID: PH03** 

Date Collected: 05/02/22 10:30 Date Received: 05/03/22 08:13

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

Lab Sample ID: 890-2267-6 Client Sample ID: PH03A

Date Collected: 05/02/22 14:35 Date Received: 05/03/22 08:13

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-2267-7

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

Total/NA

Total/NA

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

10.02 g

10 mL

24835

24860

05/04/22 15:21

05/05/22 14:47 AJ

**Eurofins Carlsbad** 

XEN MID

XEN MID

**Matrix: Solid** 

Page 22 of 30

1

Prep

Analysis

8015NM Prep

8015B NM

Job ID: 890-2267-1

SDG: 03E1558016

**Client Sample ID: BH01** 

Client: Ensolum

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

Project/Site: PLU 30 Big Sinks CTB

Lab Sample ID: 890-2267-7

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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 Lab Sample ID: 890-2267-8

Date Collected: 05/02/22 14:40 **Matrix: Solid** 

Date Received: 05/03/22 08:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-2267-9

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-2267-10

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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 MIC
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

Laboratory References:

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

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

## **Accreditation/Certification Summary**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

Project/Site: PLU 30 Big Sinks CTB

SDG: 03E

#### **Laboratory: Eurofins Midland**

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

Authority	P	rogram	Identification Number	<b>Expiration Date</b>	
Texas	N	IELAP	T104704400-21-22	06-30-22	
The following analytes the agency does not of	•	out the laboratory is not certifi	ied by the governing authority. This list ma	ay include analytes for whi	
	ter certification.				
Analysis Method	Prep Method	Matrix	Analyte		
0 ,		Matrix Solid	Analyte Total TPH		

4

5

8

10

11

13

#### **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'

	100	Relinquished by: (Signature)	f service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for a f Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sam	delice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client corepany to Eurofins Xenco, its affiliates and subcontractors. It assigns standard term of samples are deliced constitutes and about the contractors are deliced contractors.	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	PHILD.	8400	8) HOW	BHOW	PHOS	PHOS	PORIS	0×9x		EM43	Sample Identification M	Total Containers:	Sample Custody Seals: Yes No Valla	Cooler Custody Seals: Yes No N/A	1.72	SAMPLE RECEIPT Temp Blank:	PO#:	Sampler's Name: Conner Shore	Project Location:	* 03E	Project Name PLU 30 B	Phone: 334.257.	City, State ZIP: MI Aland, TX		Company Name: ENSOLUM L	Project Manager: TALOMA Mo	Xenco	
	CIN 1	Received by: (Signa)ure)	of samples and shall not assur pplied to each project and a	samples constitutes a valid i	0.56	4			0		1	- 15	- 13	d e0/50 5	21 co KO S	Matrix Sampled S	Corrected Temperature:	Temperature Reading:	Correction Factor:	Thermometer ID:	(Yey) No	)		Du		BID SAME OF B	+. 2307	10464	15 P	C	MOVEISSEY	60	
	N. Com	Signajure)	me any responsibility to charge of \$5 for each si	purchase order from cli	TCLP / SPLP 601	14.00   J.5.	+	-	200	195 x	15.0 0401	1340 3.		1.t chu	1040 0.5	Time Depth		ading:		CAMP)	Wetice: (Yes	the lab, if received by 4:30pm	TAT starts the day received by	Due Date:	Routine   Rush	Turn Around	Email: tm	City, St	SUINCHOO Address	Compa	Bill to:		
	24		ample submitted to Eu	ent company to Eurofi	xas 11 Al Sb 10 : 8RCRA SI	2.							-	6 1	6 1	Grab/ # of Comp Cont	117	20	0	aran	6		sived by		ish Pes.		t morr issen	City, State ZIP:	38	Company Name:	Bill to: (if different)	EL Paso, 1X (9) Hobbs, NM (5)	Contract of the last of the la
6	3.32 0818	Date/Time R	es incurred by the cient it such is arofins Xenco, but not analyzed. T	ns Xenco, its affiliates and subcores incurred by the client if such ic	8RCRA 13PPM Texas II AI Sb As Ba Be B Cd Ca TCLP/SPLP6010: 8RCRA Sb As Ba Be Cd Cr Co										××	Ch	E	X	ls	25							@ ensolum com	Carlsbad, NM	210H F 1018	*TO ENERA	Adrian Baker	EL Pald, 1x (915) 585-344 J. Lubbock, Tx (808) 794-1296 Hobbs, NM (575) 392-7550, Carlsbart, NM (575) 988-3199	Control of the Contro
		Relinquished by: (Signature)	oxies or expenses incurred by the cremt if such oxises are due to circumstances are submitted to Eurolins Xenco, but not analyzed. These terms will be enforced uniter	obactors. It assigns standard tem	A 13PPM Texas II Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo N TCLP / SPLP 6010 : BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U												-	090-24-0					-			ANALYSIS REQUEST	3	08888	73.	V	cr	15) 988-3199	
		ure) Received by: (Signature)	previously negotiate	ns and conditions yord the control	× Ve													THE THE PERSON NAMED IN	of Custody							EST	Deliverables: EDD	Reporting: Level II Level III L	State of Project:	Program: UST/PST P	Wor	KWWW	
line)		(Signature)			Ag SIO <sub>2</sub> Na St II Sh U V Zh Hg: 1631 / 245.1 / 7470 / 7471											Samp	NaOH+ASCO	Zn Acetate+NaOH: Zn	Na 25 20 3: NaSO 3	NaHSO ;; NABIS	H <sub>3</sub> PO <sub>4</sub> ; HP	H3SO4:H3	HCI: HC	Cool: Cool	None: NO	Preser	ADaPT   Ot	velili □ PST/UST □ TRRP □		UST/PST PRP Brownfields F	Work Order Comments	www.xenco.com Page	
New land Date: 06/25/2020 Rev. 2020 2:		Date/Time			71											Sample Comments	NAOH+ASCOIDIC ACID: SAPC	NaOH: Zn	150 1	\BIS		NaOH: Na	HNO 3: HN	MeOH: Me	DI Water: H <sub>2</sub> O	Preservative Codes	Other:	TRRP L Level IV		RRC   Superfund[		2 of 1	

## **Login Sample Receipt Checklist**

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

Login Number: 2267 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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 Source: Eurofins Midland
List Number: 2
List Creation: 05/04/22 10:56 AM

Creator: Teel, Brianna

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	

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# **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

JURAMER

Authorized for release by: 5/11/2022 7:12:57 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Review your project

results through

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Released to Imaging: 7/15/2024 1:08:08 PM

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.

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Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB
Laboratory Job ID: 890-2274-1
SDG: 03E1558016

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#### **Definitions/Glossary**

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB

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. Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

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

HPLC/IC

Qualifier **Qualifier Description** 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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**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.

Lab Sample ID: 890-2274-1

Job ID: 890-2274-1

Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS01** 

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

Sample Depth: 0.5'

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 (DR	O) (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 Rang	ge Organics (D	RO) (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
Oll 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 Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	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'

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: Ensolum Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

Lab Sample ID: 890-2274-2

Matrix: Solid

Job ID: 890-2274-1

**Client Sample ID: FS02** Date Collected: 05/03/22 11:05

Date Received: 05/03/22 16:45

Sample Depth: 0.5'

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 BTE	EX 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 Rang	ge Organics (DR	O) (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 Rar	nge Organics (DI	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	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	,
Oll Range Organics (Over C28-C36)	1380		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	•
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 Ch	romatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	141		5.00	mg/Kg			05/08/22 17:32	1

Lab Sample ID: 890-2274-3 **Client Sample ID: FS03** Date Collected: 05/03/22 11:10 **Matrix: Solid** 

Date Received: 05/03/22 16:45

Sample Depth: 0.5'

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 BT	EX 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

Lab Sample ID: 890-2274-3

05/08/22 17:41

## **Client Sample Results**

Client: Ensolum Job ID: 890-2274-1
Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Client Sample ID: FS03

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

Sample Depth: 0.5'

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 Rar	nge Organics (D	RO) (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
Oll 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 Ch	romatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: FS04

Date Collected: 05/03/22 11:15

Lab Sample ID: 890-2274-4

Matrix: Solid

4.97

mg/Kg

723

Date Collected: 05/03/22 11:15 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	
Toluene	0.0917		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	
Ethylbenzene	0.0562		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	
m-Xylene & p-Xylene	0.688		0.00401	mg/Kg		05/06/22 11:22	05/09/22 02:58	
o-Xylene	0.251		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	
Xylenes, Total	0.939		0.00401	mg/Kg		05/06/22 11:22	05/09/22 02:58	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	166	S1+	70 - 130			05/06/22 11:22	05/09/22 02:58	
1,4-Difluorobenzene (Surr)	86		70 - 130			05/06/22 11:22	05/09/22 02:58	
Method: Total BTEX - Total BTE	X Calculation							
		Qualifier	ΡI	Unit	n	Propared	Analyzed	Nil Fa
Analyte		Qualifier	RL 0.00401	Unit mg/Kg	<b>D</b>	Prepared	<b>Analyzed</b> 05/09/22 15:24	
Method: Total BTEX - Total BTE Analyte Total BTEX	Result 1.09				D	Prepared		Dil Fa
Analyte Total BTEX Method: 8015 NM - Diesel Rango	Result 1.09 e Organics (DR	O) (GC)	0.00401	mg/Kg	=		05/09/22 15:24	
Analyte Total BTEX Method: 8015 NM - Diesel Rango Analyte	Result 1.09 e Organics (DRI Result		0.00401	mg/Kg <b>Unit</b>	<u>D</u>	Prepared Prepared	05/09/22 15:24  Analyzed	Dil Fa
Analyte Total BTEX	Result 1.09 e Organics (DR	O) (GC)	0.00401	mg/Kg	=		05/09/22 15:24	
Analyte Total BTEX Method: 8015 NM - Diesel Rango Analyte	Result 1.09 e Organics (DRI Result 18800	O) (GC) Qualifier	0.00401	mg/Kg <b>Unit</b>	=		05/09/22 15:24  Analyzed	Dil Fa
Analyte Total BTEX Method: 8015 NM - Diesel Rango Analyte Total TPH Method: 8015B NM - Diesel Ran	Result 1.09 e Organics (DR) Result 18800 ge Organics (DI)	O) (GC) Qualifier	0.00401	mg/Kg <b>Unit</b>	=		05/09/22 15:24  Analyzed	Dil Fa
Analyte Total BTEX Method: 8015 NM - Diesel Rango Analyte Total TPH	Result 1.09 e Organics (DR) Result 18800 ge Organics (DI)	O) (GC) Qualifier RO) (GC)	0.00401 RL 250	mg/Kg  Unit  mg/Kg	D	Prepared	05/09/22 15:24  Analyzed  05/09/22 11:58	Dil Fa

**Eurofins Carlsbad** 

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**Matrix: Solid** 

Lab Sample ID: 890-2274-4

## **Client Sample Results**

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS04** 

Date Collected: 05/03/22 11:15 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over	2330		250	mg/Kg		05/05/22 14:19	05/07/22 08:49	5
C28-C36)								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	151	S1+	70 - 130			05/05/22 14:19	05/07/22 08:49	
o-Terphenyl	248	S1+	70 - 130			05/05/22 14:19	05/07/22 08:49	5
Method: 300.0 - Anions, Ion C	hromatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	790		4.95	mg/Kg			05/08/22 17:50	,

Lab Sample ID: 890-2274-5 **Client Sample ID: FS05** 

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

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	0.00362		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Toluene	0.200		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Ethylbenzene	0.0657		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
m-Xylene & p-Xylene	0.800		0.00403	mg/Kg		05/06/22 11:22	05/09/22 03:19	
o-Xylene	0.277		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Xylenes, Total	1.08		0.00403	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	125		70 - 130			05/06/22 11:22	05/09/22 03:19	
1,4-Difluorobenzene (Surr)	88		70 - 130			05/06/22 11:22	05/09/22 03:19	
Method: Total BTEX - Total BTEX	K Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	1.35		0.00403	mg/Kg			05/09/22 15:24	
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	12900		250	mg/Kg		<u>.</u>	05/09/22 11:58	
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	496		250	mg/Kg		05/05/22 14:19	05/07/22 08:29	
(GRO)-C6-C10								
Diesel Range Organics (Over	12400		250	mg/Kg		05/05/22 14:19	05/07/22 08:29	
Diesel Range Organics (Over C10-C28)	<b>12400</b> <250	U	250 250	mg/Kg mg/Kg		05/05/22 14:19 05/05/22 14:19	05/07/22 08:29 05/07/22 08:29	
Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)								
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	<250 %Recovery		250			05/05/22 14:19	05/07/22 08:29	
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<250 %Recovery	Qualifier	250			05/05/22 14:19  Prepared	05/07/22 08:29  Analyzed	
C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<250  **Recovery  138  122	Qualifier S1+	250  Limits  70 - 130			05/05/22 14:19  Prepared  05/05/22 14:19	05/07/22 08:29  Analyzed  05/07/22 08:29	Dil Fa
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<250  **Recovery 138 122  omatography -	Qualifier S1+	250  Limits  70 - 130		D	05/05/22 14:19  Prepared  05/05/22 14:19	05/07/22 08:29  Analyzed  05/07/22 08:29	

## **Client Sample Results**

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Lab Sample ID: 890-2274-6 **Client Sample ID: FS06** 

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

Sample Depth: 0.5'

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	_ 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 (DR	O) (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 Rang	ge Organics (D	RO) (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 Chro	omatography -	Soluble						
Method: 300.0 - Anions, Ion Chro Analyte	•	Soluble Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

## **Surrogate Summary**

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate Recovery (Acceptance Limits)
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	
390-2252-A-5-D MS	Matrix Spike	122	90	
890-2252-A-5-E MSD	Matrix Spike Duplicate	126	86	
390-2274-1	FS01	114	88	
890-2274-2	FS02	103	89	
890-2274-3	FS03	473 S1+	78	
390-2274-4	FS04	166 S1+	86	
390-2274-5	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-Bromofluorobei				

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

Matrix: Solid				Prep Type: Total/NA
				Percent Surrogate Recovery (Acceptance Limits)
		1001	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				

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OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB 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

	MB	MB						
Analyte	Result	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

MB MB

Surrogate	%Recovery 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

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

LCS LCS

Surrogate	%Recovery 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

RPD %Rec

Analyte	Added	Result (	Qualifier	Unit	D	%Rec	Limits	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

Spike

LCSD LCSD

LCSD LCSD

Surrogate	%Recovery Qu	alifier	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

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

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Prep Batch: 24964

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Prep Type: Total/NA

### QC Sample Results

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

103

101

Lab Sample ID: 880-14398-A-1-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 25052

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						

70 - 130

70 - 130

Lab Sample ID: 880-14398-A-1-D MSD

**Matrix: Solid** 

Analysis Batch: 25052

4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr)

Prep Batch: 24964 Sample Sample Spike MSD MSD RPD Added Result Qualifier %Rec RPD Limit Analyte Result Qualifier Unit Limits Benzene <0.00200 UF1 0.0998 0.04463 F1 mg/Kg 45 70 - 130 3 35 0.0998 0.03916 F1 Toluene <0.00200 UF1 mg/Kg 38 70 - 130 0 35 Ethylbenzene <0.00200 UF1 0.0998 0.03504 F1 35 70 - 130 35 mg/Kg 1 0.200 0.07036 F1 35 70 - 130 35 m-Xylene & p-Xylene <0.00401 UF1 mg/Kg 3 0.0998 <0.00200 UF1 0.03610 F1 36 70 - 130 o-Xylene mg/Kg 6

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

Lab Sample ID: MB 880-25055/8

Matrix: Solid

Analysis Batch: 25055

	MB	MB						
Analyte	Result	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	%Recovery 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				

MR MR

мв мв

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	Result	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

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Client: Ensolum Job ID: 890-2274-1 SDG: 03E1558016 Project/Site: PLU 30 BIG SINKS CTB

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

мв мв

Lab Sample ID: MB 880-25072/5-A

**Matrix: Solid** 

Analysis Batch: 25055

Prep Type: Total/NA

Prep Batch: 25072

Analyte	Result	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
	МВ	МВ						

Surrogate	%Recovery 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 **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 25055** Prep Batch: 25072

	Spike	LUS	LUS				70Rec	
Analyte	Added	Result	Qualifier	Unit	D	%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	

LCS LCS

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

Lab Sample ID: LCSD 880-25072/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 25055

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

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

Lab Sample ID: 890-2252-A-5-D MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Analysis Batch: 25055									Prep Ba	tch: 25072
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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		ma/Ka		81	70 130	

Ве Ethylbenzene <0.00200 U 0.0996 0.09087 91 70 - 130 mg/Kg 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

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Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 25072

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB 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

MS MS

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

Lab Sample ID: 890-2252-A-5-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 25055

Prep Type: Total/NA

Prep Batch: 25072

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

MSD MSD

Surrogate	%Recovery	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

	IVID	IVID						
Analyte	Result	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

мв мв

MR MR

Surrogate	%Recovery 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

Released to Imaging: 7/15/2024 1:08:08 PM

**Matrix: Solid** 

**Analysis Batch: 25225** 

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

Prep Batch: 25242

	IVID	IVID						
Analyte	Result	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

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Client: Ensolum Job ID: 890-2274-1 SDG: 03E1558016 Project/Site: PLU 30 BIG SINKS CTB

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

MB MB

Surrogate	%Recovery Qua	ualifier 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 **Client Sample ID: Lab Control Sample** 

Matrix: Solid

Analysis Batch: 25225

Prep Type: Total/NA

Prep Batch: 25242

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%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	

LCS LCS

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

Lab Sample ID: LCSD 880-25242/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 25225

Prep Type: Total/NA

Prep Batch: 25242

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

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

Lab Sample ID: 880-14479-A-6-D MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 25225

Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

MS MS

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

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Prep Batch: 25242

Prep Type: Total/NA

Prep Batch: 24911

### QC Sample Results

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 880-14479-A-6-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Prep Type: Total/NA Analysis Batch: 25225 Prep Batch: 25242

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

MSD MSD

Surrogate	%Recovery	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 Client Sample ID: Method Blank

**Matrix: Solid** 

Analysis Batch: 24947

MB MB Result Qualifier RL Unit D Analyzed Dil Fac Analyte Prepared Gasoline Range Organics <50.0 U 50.0 mg/Kg 05/05/22 14:19 05/06/22 20:46 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 05/05/22 14:19 05/06/22 20:46 C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 05/05/22 14:19 05/06/22 20:46 mg/Kg

MB MB

Surrogate	%Recovery 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 **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 24947 Prep Batch: 24911

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

LCS LCS

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

Lab Sample ID: LCSD 880-24911/3-A Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 24947** Prep Batch: 24911 Spike LCSD LCSD RPD %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 1000 1119 mg/Kg 112 70 - 130 20

(GRO)-C6-C10

**Eurofins Carlsbad** 

Project/Site: PLU 30 BIG SINKS CTB

Client: Ensolum

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

Spike LCSD LCSD %Rec RPD Added Result Qualifier Unit D %Rec Limits **RPD** Limit Analyte 1000 924 3 92 20 Diesel Range Organics (Over mg/Kg 70 - 1303

C10-C28)

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

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

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

MS MS I imits Surrogate %Recovery Qualifier 1-Chlorooctane 104 70 - 130 92 70 - 130 o-Terphenyl

Lab Sample ID: 890-2271-A-61-F MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 24947** 

Prep Batch: 24911 Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline Range Organics <50.0 U 998 1029 mg/Kg 103 70 - 13020 15 (GRO)-C6-C10 <50.0 U 998 813.9 80 70 - 130 20 Diesel Range Organics (Over mg/Kg 14 C10-C28)

MSD MSD

Surrogate %Recovery 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

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

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

Analysis Batch: 25042

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

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**Eurofins Carlsbad** 

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 880-24903/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 25042

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	243.6	mg/Kg		97	90 - 110	2	20

Lab Sample ID: 890-2271-A-51-B MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 25042** 

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	346		253	595.8		mg/Kg		99	90 - 110

Lab Sample ID: 890-2271-A-51-C MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 25042

MSD MSD %Rec RPD Spike Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 346 253 597.3 mg/Kg 100 90 - 110 20

Lab Sample ID: MB 880-25241/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 25278** 

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

**Matrix: Solid** 

**Analysis Batch: 25278** 

	Spike	LCS LCS				%Rec
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Chloride	250	257 0	ma/Ka		103	90 110

Lab Sample ID: LCSD 880-25241/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 25278** 

Spike LCSD LCSD %Rec RPD Added RPD Limit Analyte Result Qualifier Unit %Rec Limits Chloride 250 254.6 mg/Kg 102 90 - 110

Lab Sample ID: 880-14580-A-1-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 25278** 

MS MS %Rec Sample Sample Spike Added Analyte Result Qualifier Result Qualifier %Rec Limits Unit Chloride 9500 5040 14730 mg/Kg 104 90 - 110

Lab Sample ID: 880-14580-A-1-C MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 25278** 

, , , , , , , , , , , , , , , , , , , ,	Sample Sar	mple Spike	MSD	MSD				%Rec		RPD
Analyte	Result Qu	alifier Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	9500	5040	14680		mg/Kg		103	90 - 110	0	20

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

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	

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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

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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	

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Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB

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

Project/Site: PLU 30 BIG SINKS CTB

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		Matrix: Solid	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-2274-2 Matrix: Solid

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-2274-3

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

**Matrix: Solid** 

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

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

Lab Sample ID: 890-2274-4

**Client Sample ID: FS04** Date Collected: 05/03/22 11:15

Matrix: Solid

Date Received: 05/03/22 16:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-2274-5 Date Collected: 05/03/22 11:10

Matrix: Solid

Date Received: 05/03/22 16:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** 

Lab Sample ID: 890-2274-6

**Matrix: Solid** 

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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

**Eurofins Carlsbad** 

### **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	Pr	ogram	Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report, bu	it the laboratory is not certifi	ied by the governing authority. This list ma	av include analytes for w
the agency does not of	fer certification.			,
the agency does not of Analysis Method	fer certification . Prep Method	Matrix	Analyte	,
0 ,		Matrix Solid	Analyte Total TPH	

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### **Method Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

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

XEN MID

ASTM

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

#### **Protocol References:**

DI Leach

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

**Deionized Water Leaching Procedure** 

#### Laboratory References:

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

**Eurofins Carlsbad** 

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### **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'

Date/Time

Work Order No: Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Chain of Custody **Environment Testing** seurofins :

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Xenco

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

www.xenco.com Page	Work Order Comments	Program: UST/PST ☐ PRP ☐ Brownfields ☐	State of Project:	Reporting: Level     Level     PST/UST
	ADRIAN BALER	XTD EWERLY	3104 E. GREEEN ST	Carlsbod, NM 88230
	Bill to: (if different)	Company Name:	Address:	City, State ZIP:
	TALOMIA MOLEISSEY	Ensolum LLC	GOD W. Marianfeld St. Suite 400	Midland, Tx 7-9701
	i se	ne:		100

Company Name: EpuSol un LLC Address: (201 No. Manank Id St. Suile 400 City, State Zip: Midland, TX 74701 Phone: 334, 254, 8307 Project Number: 03E 1558016 Project Number: 03E 1558016 Project Location: O3E 1558016 Project Location: O3E 1558016 Project Number: O3E 1558016 Project Number: O3E 1558016 Project Number: O3E 1558016	4930 4930		-		280	Total Control	The state of the s				
te ZIP; Name: Number: Location: 's Name:	74970 74970		0	Company Name:	100	XTD	ENERGY	Pro	Program: UST/PST ☐ PRP ☐ Brownfields ☐	RRC	Superfund
Name: Number: Location: 's Name:	7970	. Suite 4		Address:		3104	3104 E. GREGEN ST		State of Project:		
Name: Number: Location: 's Name:	104	1		City, State ZIP:		Carls	Carlsbod, NM 88230		Reporting: Level   Level   PST/UST TRRP   Level V	☐ PST/UST☐ TRRP☐ 1	evel IV
Name: t Number: Location: er's Name:			Email:	Email: LMOrrISSEY		ento	@ entolum.com	Del	Deliverables: EDD	ADaPT Other:	
Location:	SINKS	1	Turn Around	pund				ANALYSIS REQUEST		Preservative Codes	35
Location: er's Name:	9	100	Routine	Rush	Pres. Code					None: NO DIV	DI Water: H <sub>2</sub> O
er's Name:		Due	Due Date:						-	lo	MeOH: Me
		TAT	starts the da lab, if receive	TAT starts the day received by the lab, if received by 4:30pm						HCL:HC HNC H <sub>2</sub> SO <sub>4</sub> :H <sub>2</sub> NaO	HNO 1: HN NaOH: Na
SAMPLE RECEIPT Temp Blank:		Va No We	Wetke:	Yes No	eters					H,PO4:HP	
tact:		Thermometer ID:	MM	F007	men			890-2274 Chain of Custody		NaHSO .: NABIS	
Cooler Custody Seals: Yes No N/A	1	Correction Factor:		C. 0 -		5			word.	Na2S,O1: NaSO	
Sample Custody Seals: Yes No N/A	7	Temperature Reading:		3.0		g	_			Zn Acetate+NaOH: Zn	- 1
Total Containers:	Con	Corrected Temperature:		800		1120				NaOH+Ascorbic Acid: SAPC	2
Sample Identification Matrix		Date Tampled Sam	Time L	Depth Grab/ Comp	/ # of Cont	(14)	14 14 14 14			Sample Comments	य
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6503		0111	0								
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. 6505		0111	0				3				
. 650c	_	× 1105	35	7	+	*	ψ →				
	7	000000									
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							100				

TCLP/SPLP6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U votice: Signature of this document and nelinquishment of samples contituding a valid purchase oider from client company to Eurofins. Xenco, its affiliates and subcontractors. It assigns standard terms and conditions from the control of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to discumisances beyond the control an charge of \$65.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously ring Circle Method(s) and Metal(s) to be analyzed

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

Received by: (Signature)

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Date/Time

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m charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofris Xenco, but not analyzed. These terms will be enforced unless previously negoti

Chain of Custody

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douston, TX (281) 240-4200, Dallas, TX (3	Midland, TX (432) 704-5440, San Antonio, TX (210) 509-33
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f.	X
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웊	Midta

**Environment Testing** 

: eurofins

Work Order No:

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 Et. Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Level IV Superfund DI Water: H<sub>2</sub>O HNO 1: HN MeOH: Me NAOH: NA Preservative Codes NaOH+Ascorbic Acid: SAPC Sample Comments ö Reporting: Level II | Level III | PST/UST | TRRP Zn Acetate+NaOH: Zn Brownfields RRC Other: Na 25 20 3: NaSO K Se Ag SiO<sub>2</sub> Na Sr TI Sn U V Zn NaHSO a: NABIS Hg: 1631 / 245.1 / 7470 / 7471 None: NO 4 PO THP Page H;505;H Cool: Cool HCL.HC Work Order Comments AD3PT www.xenco.com UST/PST PRP EDD State of Project: Deliverables: Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni TCLP/SPLP6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Program: lockee. Signature of this document and relinquithment of samples constitutes a valid purchase order from client company to Eurofina Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofina 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 kosses are due to circumstances beyond the control 890-2274 Chain of Custody ANALYSIS REQUEST 58730 3104 E. GREGEN ST BAKER arlshod ,NM XTD ENERGY tmornssey @ ensolum.com HOLL 7 ADEIAN स्त्र > (hloridos × Pres # of Cont Parameters Bill to: (if different) Company Name: Grab/ Comp FOO-M 0.0-**BRCRA 13PPM Texas 11** City, State ZIP: TAT starts the day received by the lab, if received by 4:30pm 3.0 Yes No 8.0 Rush Address: Depth 5 Turn Around 0 Email: Routine Due Date: Corrected Temperature: 89 Wet ice: Sampled 1105 Temperature Reading: Time 0011 0111 1105 1119 0111 Thermometer ID: Correction Factor: gol N. Marian Feld St. Suite MORRISSEY PLUM 30 BIG SINKSCTB X No Sampled 60/50 Date Circle Method(s) and Metal(s) to be analyzed 10464 334, 254, 8307 Matrix 03E1558016 5 ENSOLVM LL Temp Blank: Yes No N/A Yes No N/A Crimes Short 200.8 / 6020: (Yes) No Midland, TX TALOMA Sample Identification Samples Received Intact: Total 200.7 / 6010 Sample Custody Seals: Cooler Custody Seals: SAMPLE RECEIPT Total Containers: Project Number: Project Manager Company Name: Sampler's Name: roject Location: City, State ZIP: Project Name: CSOL FSOY 6505 FSOS FSON 1031 Address: # Od

Page 29 of 31

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2274-1 SDG Number: 03E1558016

Login Number: 2274 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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	

**Eurofins Carlsbad** 

### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2274-1 SDG Number: 03E1558016

> List Source: Eurofins Midland List Creation: 05/05/22 11:31 AM

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 2274

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	N/A	

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<6mm (1/4").



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

in f 💆

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
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

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,

<u>EMNRD</u>

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>

 $\textbf{Cc:} \ \ \ \, \textbf{Tacoma Morrissey} < \textbf{tmorrissey} @ ensolum.com >; \ Delaware Spills \ / SM$ 

<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
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

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**

			Kesp	unsible Faity	ıy
Responsible	Party XTO	Energy		OGRID 4	5380
Contact Nan				Contact Te	Telephone 432-236-3808
Contact ema	<sup>il</sup> adrian.bak	er@exxonmobil.c	om	Incident #	# (assigned by OCD)
			Rd Bldg 5, Midlan	nd, Texas, 79707	
			Location	of Release So	Source
Latitude 32.	10407		(NAD 83 in deci	Longitude _ imal degrees to 5 decim	
Site Name Pl	LU 30 Big S	inks		Site Type C	СТВ
Date Release	Discovered	03/19/2022		API# (if app	pplicable)
Unit Letter	Section	Township	Range	Coun	inty
F	30	25S	31E	Edd	dy
	Materia	ll(s) Released (Select a		Volume of I	Release ic justification for the volumes provided below)
x Crude Oi		Volume Release		surculations of specific	Volume Recovered (bbls) 144.00
× Produced	Water	Volume Release	ed (bbls) 97.01		Volume Recovered (bbls) 96.00
-		in the produced	tion of total dissolv water >10,000 mg/		☐ Yes ☐ No
Condensa		Volume Release			Volume Recovered (bbls)
☐ Natural C		Volume Release			Volume Recovered (Mcf)
Other (de	escribe)	Volume/Weight	Released (provide	units)	Volume/Weight Recovered (provide units)
Cause of Rel	bouncii	ng beny and baner	ter dump of the sep y ESD into contain and for remediation	iment and misting	nding fluids to the skim tank. Fluids then released from g pad. All free fluids were recovered. A third-party

Received by OCD: 6/28/2024 5:32:50 PM Form C-141 State of New Mexico Oil Conservation Division Page 2

	PageH36eof 32	
ent ID		

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the respon	nsible party consider this a major release?
release as defined by	A release equal to or greater than 25 barrel	s.
19.15.29.7(A) NMAC?		
¥ Yes □ No		
ICATEC ' 1' /		0 1071 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
i e	·	nom? When and by what means (phone, email, etc)?
PM via email.	Mike Bratcher; Victoria Venegas; Rob Ham	let; ocd.enviro@state.nm.us on Saturday, March 19, 2022 12:47
Pivi via eman.		
	Initial Ro	esponse
The responsible	party must undertake the following actions immediatel	y unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.	
<u> </u>	**	
_	as been secured to protect human health and	
Released materials ha	ave been contained via the use of berms or d	likes, absorbent pads, or other containment devices.
■ All free liquids and re	ecoverable materials have been removed and	d managed appropriately.
If all the actions describe	d above have <u>not</u> been undertaken, explain v	why:
NA		·
1171		
		emediation immediately after discovery of a release. If remediation
		efforts have been successfully completed or if the release occurred
		blease attach all information needed for closure evaluation.
		best of my knowledge and understand that pursuant to OCD rules and
		fications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have
failed to adequately investig	ate and remediate contamination that pose a thre	at to groundwater, surface water, human health or the environment. In
addition, OCD acceptance o and/or regulations.	f a C-141 report does not relieve the operator of	responsibility for compliance with any other federal, state, or local laws
		CONTROL II
Printed Name: Adrian B	iker	Title: SSHE Coordinator
/ No	A law	
Signature:	-4.5	Date: 4/1/2022
email: adrian.baker@exx	conmobil.com	Telephone: 432-236-3808
		•
OCD Only		
Received by:		Date:

Location:	PLU 30 Big Sinks CTB		
Spill Date:	3/19/2022		
	Area 1		
Approximate A	rea =	1347.50	cu.ft.
	VOLUME OF LEAK		
Total Crude Oil	=	144.00	bbls
Total Produced	Water =	96.00	bbls
	Area 2		
Approximate A	rea =	5696.00	sq. ft.
Average Satura	tion (or depth) of spill =	1.00	inches
Average Porosi	ty Factor =	0.03	
<u> </u>			
	VOLUME OF LEAK	1	1
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

Page 138 of 324

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 <b>not</b> 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.			
<ul> <li>Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring well Field data</li> <li>□ Data table of soil contaminant concentration data</li> <li>□ Depth to water determination</li> <li>□ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li> <li>□ Boring or excavation logs</li> <li>□ Photographs including date and GIS information</li> </ul>	ls.		
☐ 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.

Received by OCD: 6/28/2024 5:32:50 PM Form C-141 State of New Mexico Oil Conservation Division Page 4

	Page 139 of 3	24
D	NAPP2209137379	

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. **Environmental Coordinator** Printed Name: Garrett Green Date: \_ <u>3/6/2023</u> \_\_\_\_ Signature: email: \_garrett.green@exxonmobil.com Telephone: <u>575-200-0729</u> **OCD Only** Received by: Date: \_\_\_\_\_

lew Mexico

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.		
<ul> <li>□ Detailed description of proposed remediation technique</li> <li>□ Scaled sitemap with GPS coordinates showing delineation points</li> <li>□ Estimated volume of material to be remediated</li> <li>□ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC</li> <li>□ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)</li> </ul>		
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.		
11	as to the least of much moral day and make a day to make a	
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: _ Sat Sun	Date: <u>3/6/2023</u>	
email: _garrett.green@exxonmobil.com	Telephone: <u>575-200-0729</u>	
OCD Only		
	D .	
Received by:	Date:	
☐ Approved ☐ Approved with Attached Conditions of	Approval	
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;

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 705 W. Wadley, Suite 210 | Midland, TX 78209 | ensolum.com Texas PG Firm No. 50588 | Texas PE Firm No. F-21843 XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

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



XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

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



XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

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/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.

XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

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

Sincerely, **Ensolum**, **LLC** 

Field Geologist

Corner Whitman

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

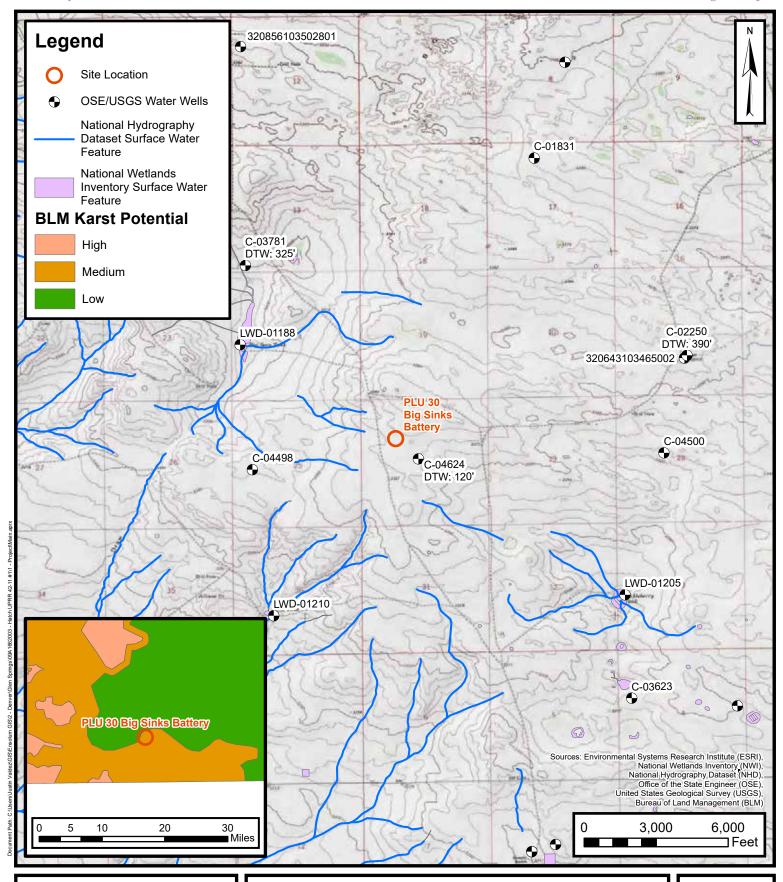
Appendix B Lithologic / Soil Sampling Logs

Appendix C Laboratory Analytical Reports & Chain-of-Custody Documentation

Appendix D NMOCD Notifications Appendix E Final C-141 Notification



**FIGURES** 





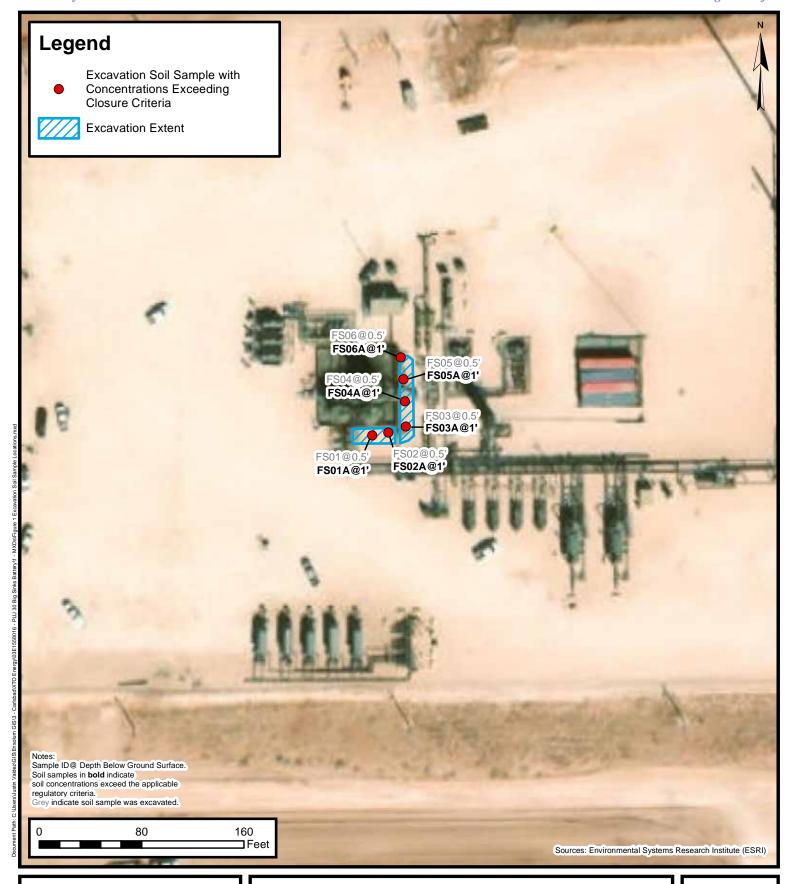
# **Site Receptor Map**

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

1

**FIGURE** 

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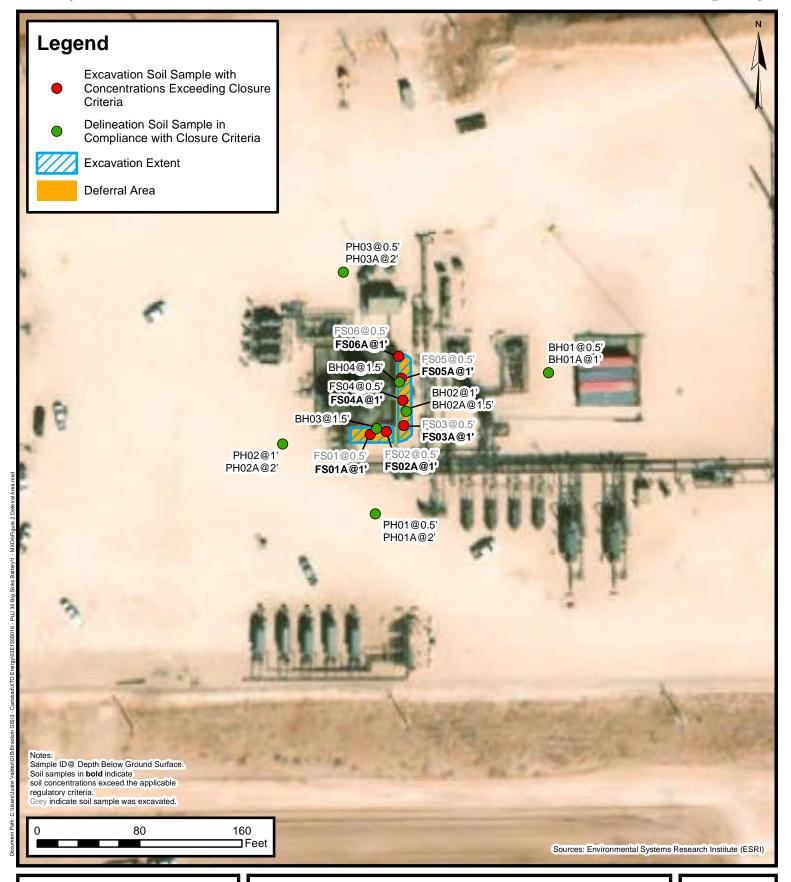




# **Excavation Soil Sample Locations**

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

**FIGURE** 





# **Deferral Area**

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



**TABLES** 



# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 30 BIG SINKS BATTERY XTO ENERGY, INC EDDY COUNTY, NEW MEXICO

Sample I.D.	Sample I.D. Sample Samp Date (fee		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 Cl	osure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Asse	ssment Soil Sa	mples				
<del>SS01</del>	04/15/2022	0.5	<0.0398	<del>158</del>	4,620	11,200	<del>&lt;250</del>	15,800	15,800	103
<del>\$\$02</del>	04/15/2022	0.5	<del>&lt;0.0402</del>	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
				Confi	rmation Soil Sa	amples				
FS01	05/03/2022	0.5'	<0.00201	0.299	1,290	10,400	<del>1,640</del>	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'	<del>&lt;0.00200</del>	0.844	1,180	<del>7,810</del>	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	<del>&lt;250</del>	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	<del>16,000</del>	<del>&lt;250</del>	<del>16,600</del>	16,600	<del>106</del>
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.

MMAC: New Mexico Administrative Code Grey text indicates soil sample removed during excavation activities

GRO: Gasoline Range Organics DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon



**APPENDIX A** 

Photographic Log



#### **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.

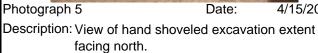


## Photographic Log

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379







Description: View of hand shoveled excavation extent facing south.



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.



**APPENDIX B** 

Lithologic Soil Sampling Logs



	OSE POD NO. (V		)		WELL TAG ID NO	),		OSE FILE NO	S).						
NOLL	C-4624 POD WELL OWNER							C-4624 PHONE (OPTI	ONAL						
OCA	XTO ENERG							432-236-38							
AND WELL LOCATION	WELL OWNER 6401 HOLID							CITY MIDLAND		STATE TX 79707	ZIP				
AL AND	WELL LOCATION		DI	EGREES 32	MINUTES 6	seconds 5.66	SECONDS 5.66 N		REQUIRED: ONE TEN	TH OF A SECOND					
GENERAL	(FROM GPS)	LON	NGITUDE	-103	49	5.79	W	* DATUM REQUIRED: WGS 84							
1. GE	Land to the second section of the second		UNIT 30 BS # 1031		ESS AND COMMO	N LANDMARI	CS – PLS	SS (SECTION, TO	WNSHJIP, RANGE) WH	IERE AVAILABLE					
	LICENSE NO. WD-118	4	NAME OF LICENSED		LL SOUTHER	LAND			NAME OF WELL DR WEST TEXAS	ILLING COMPANY S WATER WELL SE	ERVICE				
	DRILLING STAR 06/22/2		DRILLING ENDED 06/22/22	DEPTH OF COM	COMPLETED WELL (FT) BORE HOLE DEPTH (FT) 120			LE DEPTH (FT)	DEPTH WATER FIR	ST ENCOUNTERED (F	r).				
Z						OW (UNCONFI	NED)		STATIC WATER LEV	VEL IN COMPLETED W N/A	ELL (FT)				
VIIO	DRILLING FLUI	D:	✓ AIR	☐ MUD	ADDITIV	VES – SPECIF	Y:								
RM	DRILLING MET	HOD:	✓ ROTARY	HAMMER	CABLET	LOOP [	OTHE	ER - SPECIFY:							
CASING INFORMATION	DEPTH (fee	t bgl)	BORE HOLE DIAM (inches)	(include e	MATERIAL ANI GRADE ach casing string, ections of screen	, and	CON	ASING NECTION TYPE oling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches				
ING & C				NO CA	ASING IN HOL	E									
2. DRILLING &															
	DEPTH (fe	et bgl)	BORE HOLE	LIS	T ANNULAR SI	EAL MATE	RIAL A	AND	AMOUNT	METHO	OD OF				
MAL	FROM	ТО	DIAM. (inches)	GRAV	EL PACK SIZE	-RANGE B	Y INTE	ERVAL	(cubic feet)	PLACE	MENT				
ANNULAR MATERIAL					N/A				OGEDII JUL.	25 2022 pm. 15d					
3. ANNUI															
FOR	OSE INTERNA	LUSE						WR_2	0 WELL RECORD	& LOG (Version 04/	30/19)				
			-POD1		POD NO	D. POD		TRN 1			551.15)				
OC	ATION 7	5.	31E.30.	4.4.1				WELL TAG II	DNO.	PAGI	E 1 OF 2				

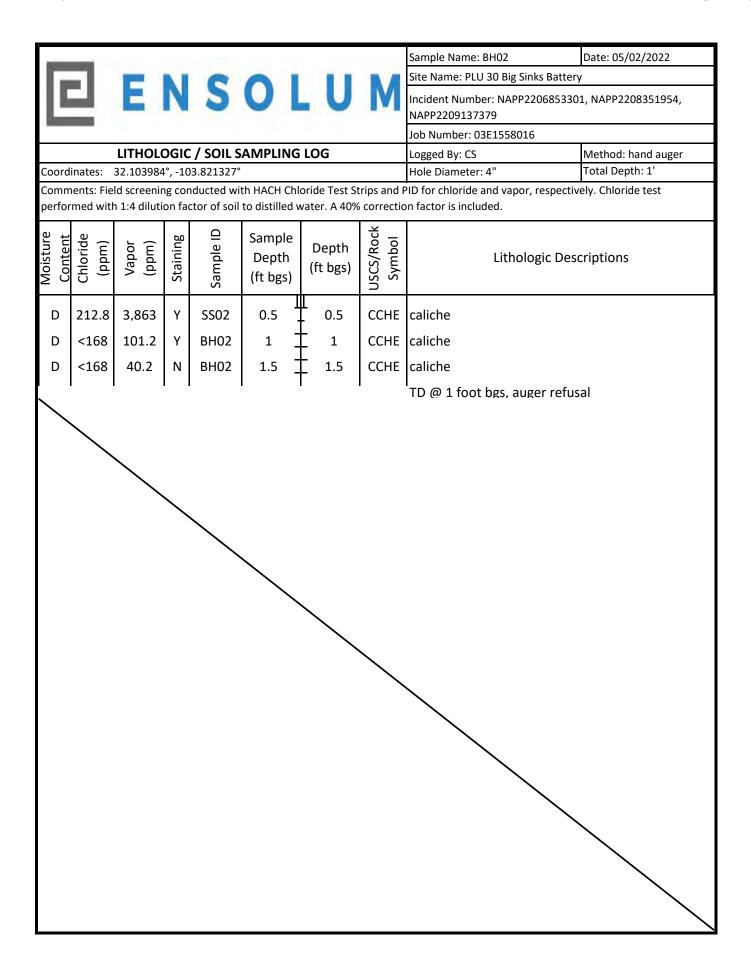
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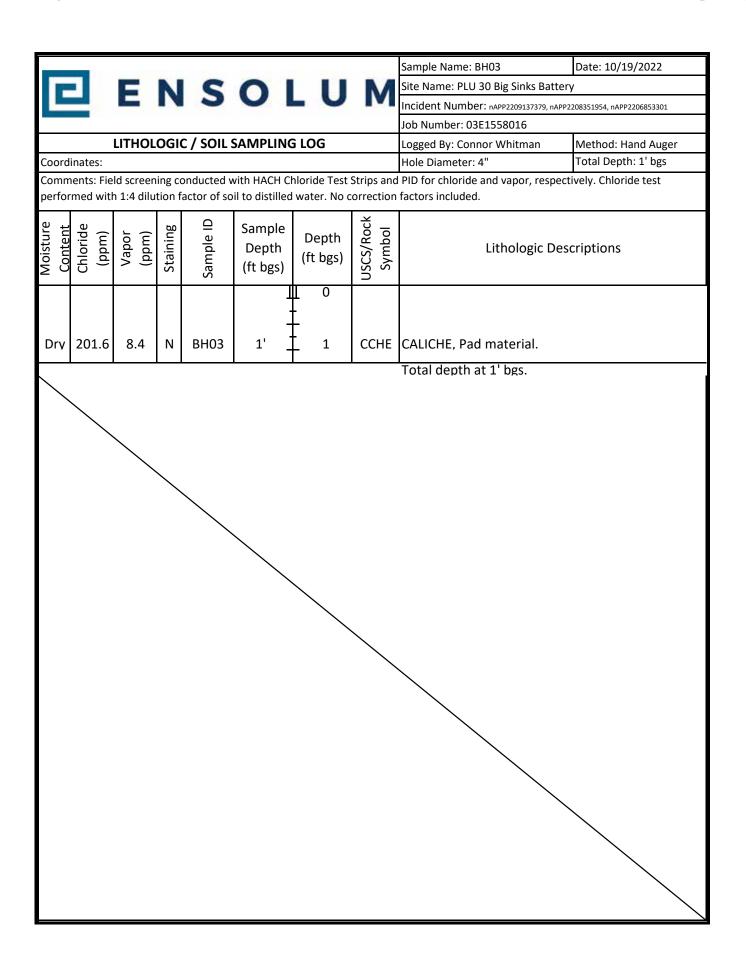
PAGE 2 OF 2

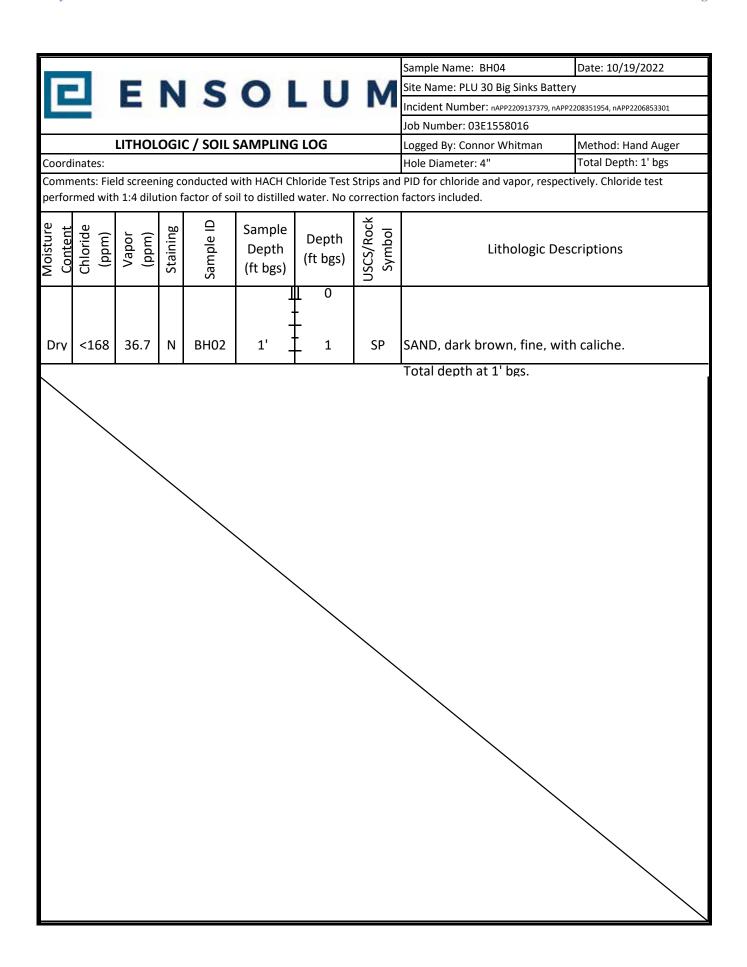
WELL TAG ID NO.

	DEPTH (	feet bgl)		COLOR AND TYPE OF MATERI	IAL ENCOUNTERED -	WATER	ESTIMATED FOR					
	FROM	то	THICKNESS (feet)	INCLUDE WATER-BEARING CAVIT (attach supplemental sheets to fi	IES OR FRACTURE ZONES		YIELD FOR WATER- BEARING ZONES (gpm)					
	0	17		CALACHII	E	Y ✓N						
	17	30		SAND		Y ✓N						
	30	40		SAND, SMALL G	RAVEL	Y ✓N						
	40	95		SAND		Y ✓N						
	95	120		SANDSTONE, S	SAND	Y ✓N						
Ţ						Y N						
WEL						Y N						
OF						Y N						
900						Y N						
ICI						Y N						
100						Y N						
EO						Y N						
ROC						Y N						
HYDROGEOLOGIC LOG OF WELL						Y N						
4						Y N						
						Y N						
						Y N						
ì						Y N						
						Y N						
						Y N						
						Y N						
	METHOD U	TOTAL ESTIMATED										
			AIR LIFT	BAILER OTHER - SPECIFY: DR	WELL YIELD (gpm):	0.00						
NO	WELL TES			CH A COPY OF DATA COLLECTED DUE IE, AND A TABLE SHOWING DISCHARG								
TEST; RIG SUPERVISI	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 NAM	ME(S) OF D	RILL RIG SUPER	VISOR(S) THAT PROVIDED ONSITE SUP	ERVISION OF WELL CONS	STRUCTION OTHER TH	IAN LICENSEI					
vi	RUSSELL	RUSSELL SOUTHERLAND										
SIGNATURE	RECORD O	F THE ABO	OVE DESCRIBED	AT TO THE BEST OF MY KNOWLEDGE WELL. I ALSO CERTIFY THAT THE WEL WITH THE PERMIT HOLDER WITHIN 30	L TAG, IF REQUIRED, HAS DAYS AFTER THE COMPL	S BEEN INSTALLED AN	ND THAT THIS					
6. SIG	Kussu	De	with V	Russell Southerland	21	06/22/2022						
	111111111	SIGNAT	URE OF DRILLER	R / PRINT SIGNEE NAME		DATE						
FOF	R OSE INTER	NAL USE			WR-20 WEL	L RECORD & LOG (Ver	rsion 04/30/201					
	E NO.			POD NO.	TRN NO.							

LOCATION









# APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation

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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 12:04:17 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



# **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

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

Revision 2

Page 2 of 20

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

Laboratory Job ID: 890-3250-1
SDG: 03E1558016

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery

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** 

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

Duplicate Error Ratio (normalized absolute difference) **DER** 

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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) Minimum Detectable Concentration (Radiochemistry) MDC

MDL Method Detection Limit Minimum Level (Dioxin) ML MPN Most Probable Number Method Quantitation Limit MQL

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

**Practical Quantitation Limit PQL** 

**PRES** Presumptive QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RI 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: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery 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.

Matrix: Solid

Lab Sample ID: 890-3250-1

Client: Ensolum

Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Client Sample ID: BH04** 

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

Sample Depth: 1.5'

Chloride

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 BTE	X - Total BTE	X Calculat	ion					
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 - D	_	•	, , ,					
Analyte		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 -	_	_						
Analyte		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
Oll 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 - Ar	ions, Ion Chr	omatogra	ohy - Soluble					
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

4.98

mg/Kg

201

10/24/22 18:40

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

			Perce	nt Surrogate Red
		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-Bromofluorob	enzene (Surr)			
DFBZ = 1,4-Difluorobe	enzene (Surr)			

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

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

			Percent	t Surrogate Recovery (Acceptance Limits)
ah Samula ID	Client Commis ID	1CO1 (70-130)	OTPH1 (70-130)	
ab Sample ID 90-3240-A-2-C MS	Client Sample ID	<b>`</b>	<u> </u>	
90-3240-A-2-C MS	Matrix Spike	82	84	
90-3240-A-2-D MSD	Matrix Spike Duplicate	79	81	
90-3250-1	BH04	79	87	
CS 880-37503/2-A	Lab Control Sample	90	100	
CSD 880-37503/3-A	Lab Control Sample Dup	99	110	
1B 880-37503/1-A	Method Blank	118	133 S1+	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery

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

	MB	MR						
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 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

MB MB

Surrogate	%Recovery 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

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Prep Batch: 37514

Prep Batch: 37514

Lab Sample ID: LCS 880-37514/1-A **Matrix: Solid** 

**Analysis Batch: 37615** 

	Spike	LCS LCS			%Rec	
Analyte	Added	Result Qualifier	Unit	D %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	

LCS LCS

Surrogate	%Recovery Qualifie	r Limits
4-Bromofluorobenzene (Surr)	96	70 - 130
1,4-Difluorobenzene (Surr)	89	70 - 130

Lab Sample ID: LCSD 880-37514/2-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 37615** 

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

Surrogate	%Recovery	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									Prep Type: Total/NA Prep Batch: 37514
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00201	U	0.100	0.1004		mg/Kg		99	70 - 130
Toluene	< 0.00201	U	0.100	0.1142		ma/Ka		114	70 - 130

**Eurofins Carlsbad** 

**Client Sample ID: Matrix Spike** 

# **QC Sample Results**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

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

Lab Sample ID: 890-3253-A-1-A MS Client Sample ID: Matrix Spike **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 37615** Prep Batch: 37514

Sar	nple Sample	Spike	MS	MS				%Rec	
Analyte Re	sult Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene <0.00	)201 U	0.100	0.09592		mg/Kg		96	70 - 130	
m-Xylene & p-Xylene <0.00	)402 U	0.200	0.2008		mg/Kg		100	70 - 130	
o-Xylene <0.00	)201 U	0.100	0.1000		mg/Kg		100	70 - 130	

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

Lab Sample ID: 890-3253-A-1-B MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

Matrix: Solid Analysis Batch: 37615

Analysis Batch: 37615									Prep E	atch: 3	37514
-	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

MSD MSD Surrogate %Recovery Qualifier Limits 97 70 - 130 4-Bromofluorobenzene (Surr) 72 70 - 130 1,4-Difluorobenzene (Surr)

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

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

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 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
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1

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

Lab Sample ID: LCS 880-37503/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 37444** Prep Batch: 37503 Sniko ורפ ורפ

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

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

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

Lab Sample ID: LCS 880-37503/2-A

Lab Sample ID: LCSD 880-37503/3-A

Lab Sample ID: 890-3240-A-2-C MS

**Matrix: Solid** 

**Analysis Batch: 37444** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 37503

LCS LCS

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

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** 

**Matrix: Solid** 

C10-C28)

**Analysis Batch: 37444** 

Prep Batch: 37503

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

LCSD LCSD

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

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Prep Batch: 37503

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

C10-C28)

**Matrix: Solid** 

**Analysis Batch: 37444** 

MS MS

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

Lab Sample ID: 890-3240-A-2-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 37444** 

Prep Type: Total/NA

Prep Batch: 37503 %Rec **RPD** 

Sample Sample Spike MSD MSD Result Qualifier Result Qualifier Limits **RPD** Limit **Analyte** Added Unit %Rec <49.9 U 998 1014 102 Gasoline Range Organics mg/Kg 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 762.1 mg/Kg 74 70 - 130 3 20

C10-C28)

MSD MSD

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

# **QC Sample Results**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37513/1-A **Client Sample ID: Method Blank Matrix: Solid** 

**Prep Type: Soluble** 

**Analysis Batch: 37653** 

Analyte

Chloride

MB MB Result Qualifier RL Unit D Prepared Analyzed Dil Fac 5.00 10/24/22 16:26 <5.00 U mg/Kg

Lab Sample ID: LCS 880-37513/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** 

**Prep Type: Soluble** 

**Analysis Batch: 37653** 

Spike LCS LCS %Rec **Analyte** Added Result Qualifier Unit D %Rec Limits 250 Chloride 252.2 mg/Kg 101 90 - 110

Lab Sample ID: LCSD 880-37513/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 37653** 

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit Limits RPD Limit D %Rec Chloride 250 254.8 102 90 - 110 20 mg/Kg

# **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

Released to Imaging: 7/15/2024 1:08:08 PM

<b>Lab Sample ID</b> 890-3250-1	Client Sample ID	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
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	

**Eurofins Carlsbad** 

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# **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 I	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** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

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# **Accreditation/Certification Summary**

Client: Ensolum

Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery 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	<b>Expiration Date</b>
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
3015B 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
3015NM 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

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# **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'

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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 (808) 794-1296 Hobbs, NM (575) 392-7550, Carisbad, NM (575) 988-3199

Work Order No:

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Project Manager: Tac	Tacoma Morrissey			Bill to: (if different)		Garrett Green	Ben		Work	Work Order Comments	ts	_
	Ensolum			Company Name:		XTO Energy	39		Program: UST/PST   PRP   Brownfleids   RRC   Superfund	☐ Brownfields ☐	RRC Superfund	-
	3122 National Parks Hwy	Hwy		Address:	8	3104 E. Green St	reen St.		State of Project:	A CONTRACTOR OF THE PROPERTY OF		
e ZIP.	Carlsbad, NM 88220			City, State ZIP.		Carlsbad,	Carlsbad, NM 88220		Reporting: Level II Clevel III PST/UST TRRP L Level IV	III 🗌 PST/UST 🖺	TRRP   Level IV	_
	303-887-2946		Email.	Email: Garrett Green@ExxonMobil com	n@Exx	o lidoMn	mo		Deliverables: EDD	ADaPT [	Other	100
Project Name:	PLU 30 Big Sinks Battery	s Battery	Turn A	Around	1000		1000	ANALYSIS REQUEST	IEST	Pre	Preservative Codes	
Project Number.	03E1558016	16	Routine	□ Rush	Pres. Code					None: NO	DI Water: H <sub>2</sub> O	
Project Location:			Due Date:				- 17 h			Cool: Cool	7	
Sampler's Name:	Connor Whitman	tman	TAT starts the	TAT starts the day received by the lab. if received by 4:30cm	-				_	HCL HC	HNO, HN	
PO#:		4	110000000000000000000000000000000000000	4	_					Thores.	e e	_
SAMPLE RECEIPT	Temp Blank:	Lyes No	Wet Ice:	Se No	mete	(0.0				H,PO. HP	9	
Samples Received Intact:	\$		- N	1007	e Je	300				Name of Aller	Cigon	
Cooler Custody Seals:	Yes No AUA	Correction Factor.	ctor.	c è	d	₽¥d				New CONCERN	Navo	
Sample Custody Seals:	Yes No AMA	Aemperature Reading:	Reading:	3.0		13) S	1	890-3250 Chain of Custody	ody	Zn Aceta	Zn Acetate+NaOH: Zn	
Total Containers:	STATES AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF	Corrected Temperature:	mperature:	2.0	12	TATACHT.			35 35 35 35 35 35 35	NaOH+A	NaOH+Ascorbic Acid: SAPC	
Sample Identification	ation Matrix	Date	Time	Depth Grab/	b/ # of Cont	SHLOR	) X3T8			Sar	Sample Comments	
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Total 200.7 / 6010	200.8 / 6020:		BRCRA 13PPM	M Texas 11 AI S	Al Sb	b As Ba	Be B Cd	Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni	X Se A	Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zr Ho: 1631/245.1/7470 / 7471	Sn U V Zn 7470 / 7471	
Notice: Standarte of this document and relinquishment of as	werdings) to be dried	yzed of samples consti	itutes a valid purchi	hase order from	client com	pany to Euro	fins Xenco, i	CITCLE IMPRINCES AIM INTERESTS TO DE ATTACKED.  INCIDE: Standard of this document and retinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions.	ssigns standard terms and condit	ilons		200
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12/30/2022 (Rev. 2)

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3250-1 SDG Number: 03E1558016

Login Number: 3250 **List Source: Eurofins Carlsbad** 

List Number: 1

Creator: Stutzman, Amanda

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 Source: Eurofins Midland** List Creation: 10/21/22 10:46 AM List Number: 2

Creator: Rodriguez, Leticia

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	
ls 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	N/A	

<6mm (1/4").

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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



# **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 <u>Jessica.Kramer@et.eurofinsus.com</u> (432)704-5440

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Client: Ensolum
Project/Site: PLU 30 Big Sinks
Laboratory Job ID: 880-22192-1
SDG: 03E1558016

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## **Definitions/Glossary**

Job ID: 880-22192-1 Client: Ensolum Project/Site: PLU 30 Big Sinks

SDG: 03E1558016

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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** 

Detection Limit (DoD/DOE) DL

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) Most Probable Number MPN Method Quantitation Limit MQL

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NFG 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)

Relative Percent Difference, a measure of the relative difference between two points RPD

TEF Toxicity Equivalent Factor (Dioxin) TFO Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

**Eurofins Midland** 

#### Case Narrative

Job ID: 880-22192-1 Client: Ensolum

Project/Site: PLU 30 Big Sinks 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.

Matrix: Solid

Lab Sample ID: 880-22192-1

# **Client Sample Results**

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Client Sample ID: FS05A

Date Collected: 12/01/22 13:05 Date Received: 12/01/22 14:38

Sample Depth: 1'

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	
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	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
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 - 1	Total BTEX Cald	culation						
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 - Diese	el Range Organ	ics (DRO) (	GC)					
Method: SW846 8015 NM - Diese Analyte	•	ics (DRO) ( Qualifier	GC) RL	Unit	D	Prepared	Analyzed	Dil Fac
	•		•	Unit mg/Kg	D	Prepared	<b>Analyzed</b> 12/07/22 09:45	
Analyte	Result 4080	Qualifier	<b>RL</b> 50.0		D	Prepared		
Analyte Total TPH	Result 4080 sel Range Orga	Qualifier	<b>RL</b> 50.0		D	Prepared Prepared		1
Analyte Total TPH Method: SW846 8015B NM - Dies	Result 4080 sel Range Orga	Qualifier nics (DRO)	RL 50.0	mg/Kg			12/07/22 09:45	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics	Result 4080 sel Range Orga Result	Qualifier nics (DRO)	FL 50.0 (GC)	mg/Kg Unit		Prepared	12/07/22 09:45  Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result 4080 sel Range Orga Result 84.4	Qualifier  nics (DRO)  Qualifier	RL 50.0 (GC) RL 50.0	mg/Kg  Unit  mg/Kg		Prepared 12/05/22 11:32	12/07/22 09:45  Analyzed 12/06/22 13:42	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result 4080 sel Range Orga Result 84.4 4000	Qualifier  nics (DRO) Qualifier	RL 50.0 (GC) RL 50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 12/05/22 11:32 12/05/22 11:32	12/07/22 09:45  Analyzed 12/06/22 13:42 12/06/22 13:42	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result 4080 sel Range Orga Result 84.4 4000 <50.0	Qualifier  nics (DRO) Qualifier	RL 50.0 (GC) RL 50.0 50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 12/05/22 11:32 12/05/22 11:32	12/07/22 09:45  Analyzed 12/06/22 13:42 12/06/22 13:42	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result 4080 sel Range Orga Result 84.4 4000 <50.0	Qualifier  nics (DRO) Qualifier	RL 50.0 (GC) RL 50.0 50.0	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 12/05/22 11:32 12/05/22 11:32 12/05/22 11:32 Prepared	Analyzed 12/06/22 13:42 12/06/22 13:42 12/06/22 13:42 Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result 4080  sel Range Orga Result 84.4  4000  <50.0  %Recovery 114 114	Qualifier  nics (DRO) Qualifier  U Qualifier	RL 50.0 (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 12/05/22 11:32 12/05/22 11:32 12/05/22 11:32 Prepared 12/05/22 11:32	Analyzed 12/06/22 13:42 12/06/22 13:42 12/06/22 13:42 Analyzed 12/06/22 13:42	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result 4080 sel Range Orga Result 84.4 4000 <50.0 %Recovery 114 114 5, Ion Chromato	Qualifier  nics (DRO) Qualifier  U Qualifier	RL 50.0 (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 12/05/22 11:32 12/05/22 11:32 12/05/22 11:32 Prepared 12/05/22 11:32	Analyzed 12/06/22 13:42 12/06/22 13:42 12/06/22 13:42 Analyzed 12/06/22 13:42	Dil Face  1  Dil Face  1  Dil Face  1  Dil Face  1  Dil Face

Client Sample ID: FS06A Lab Sample ID: 880-22192-2 Matrix: Solid

Date Collected: 12/01/22 13:10 Date Received: 12/01/22 14:38

Sample Depth: 1'

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** 

Date Collected: 12/01/22 13:10

# **Client Sample Results**

 Client: Ensolum
 Job ID: 880-22192-1

 Project/Site: PLU 30 Big Sinks
 SDG: 03E1558016

Client Sample ID: FS06A Lab

18.6

Lab Sample ID: 880-22192-2 Matrix: Solid

12/08/22 08:59

Date Received: 12/01/22 14:38 Sample Depth: 1'

Chloride

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 - T	otal BTEX Cald	culation						
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 - Diese	l Range Organ	ics (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
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: SW846 8015B NM - Dies	•		• •	Unit	n	Prenared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	107		50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	,
Diesel Range Organics (Over C10-C28)	3740		50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	137	S1+	70 - 130			12/05/22 11:32	12/06/22 14:03	
o-Terphenyl	133	S1+	70 - 130			12/05/22 11:32	12/06/22 14:03	
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte	Deculé	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa

5.02

mg/Kg

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 880-22192-1

 Project/Site: PLU 30 Big Sinks
 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-Bromofluorober	zene (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				

**Eurofins Midland** 

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OTPH = o-Terphenyl

Client: Ensolum Job ID: 880-22192-1 SDG: 03E1558016 Project/Site: PLU 30 Big Sinks

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

	MB	MB						
Analyte	Result	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

MB MB

Surrogate	%Recovery 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

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%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	

LCS LCS

Surrogate	%Recovery	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

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1.4-Difluorobenzene (Surr)	104		70 - 130

**Eurofins Midland** 

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

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

Lab Sample ID: MB 880-41024/1-A

Lab Sample ID: LCS 880-41024/2-A

**Matrix: Solid** 

**Analysis Batch: 41104** 

**Matrix: Solid** 

Analysis Batch: 41104

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41024

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 08:55	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 08:55	1
C10-C28)								
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 08:55	1
	***	***						
	МВ	MB						

Surrogate	%Recovery (	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

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 41024

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 840.2 84 70 - 130 mg/Kg (GRO)-C6-C10 1000 897.2 Diesel Range Organics (Over mg/Kg 90 70 - 130C10-C28)

LCS LCS

MD MD

Surrogate	%Recovery Qualifi	er Limits
1-Chlorooctane	129	70 - 130
o-Terphenyl	120	70 - 130

Lab Sample ID: LCSD 880-41024/3-A Client Sample ID: Lab Control Sample Dup

Spike

**Matrix: Solid** 

Analysis Batch: 41104

Prep Type: Total/NA Prep Batch: 41024 LCSD LCSD

RPD %Rec RPD Limit Limits 70 - 130 20

20

Analyte Added Result Qualifier %Rec Unit Gasoline Range Organics 1000 836.2 mg/Kg 84 (GRO)-C6-C10 Diesel Range Organics (Over 1000 886.7 mg/Kg 89 70 - 130 C10-C28)

LCSD LCSD

Surrogate	%Recovery Qualit	ier 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 Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 41085

мв мв Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac <5.00 U 5.00 12/07/22 22:10 Chloride mg/Kg

**Eurofins Midland** 

Chloride

## **QC Sample Results**

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks

SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-40959/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid Prep Type: Soluble** Analysis Batch: 41085

Spike LCS LCS %Rec Result Qualifier Analyte Added Unit %Rec Limits Chloride 250 267.0 mg/Kg 107 90 - 110

Lab Sample ID: LCSD 880-40959/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid Prep Type: Soluble** Analysis Batch: 41085

267.4

mg/Kg

107

90 - 110

0

Spike LCSD LCSD %Rec RPD Limit Added Result Qualifier RPD Analyte Unit %Rec Limits

250

**Eurofins Midland** 

# **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	

**Eurofins Midland** 

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# **QC Association Summary**

 Client: Ensolum
 Job ID: 880-22192-1

 Project/Site: PLU 30 Big Sinks
 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

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Job ID: 880-22192-1

Client: Ensolum Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Client Sample ID: FS05A Lab Sample ID: 880-22192-1 Date Collected: 12/01/22 13:05 Matrix: Solid Date Received: 12/01/22 14:38

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	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 Lab Sample ID: 880-22192-2

Date Collected: 12/01/22 13:10 Matrix: Solid Date Received: 12/01/22 14:38

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	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
 Job ID: 880-22192-1

 Project/Site: PLU 30 Big Sinks
 SDG: 03E1558016

## **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	Expiration Date	
Texas	NE	ELAP	T104704400-22-24	06-30-23	
The following analytes	are included in this report hi	it the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for y	
the agency does not of	' '	it the laboratory is not certifi	ed by the governing authority. This list his	ay include analytes for v	
0 ,	' '	Matrix	Analyte	ay include analytes for v	
the agency does not of	fer certification.	•	, , ,	ay include analytes for v	

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# **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

**Eurofins Midland** 

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# **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'

City, State ZIP Address.

3122 Nominous

Project Manager Company Name

Bill to: (if different) Company Name

Tivionment Testing

# Chain of Custody

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296	Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334	Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
-		Work Order No: JUTIN	7 ( )

Program:

UST/PST | PRP | Brownfields |

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Work Order Comments

www.xenco.com

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e 303 - 167 - 256/C Email Cocyclet Greath Show Machine College EDD All All States and Level III	e+NaOH Zn	Zn Acetat		g i d	2.	_	N/A	Yes	Sample Custody Seals.
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## **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 880-22192-1

 SDG Number: 03E1558016

Login Number: 22192 List Source: Eurofins Midland

List Number: 1

Creator: Kramer, Jessica

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

# **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 12:00:36 PM

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

Revision 2

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

Laboratory Job ID: 890-3243-1
SDG: 03E1558016

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery

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** 

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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** 

DΙ 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)

MCI EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) MDC

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)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) TEQ

**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.

Date Received: 10/20/22 09:38

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Client Sample ID: BH03** Lab Sample ID: 890-3243-1 Date Collected: 10/19/22 10:40 **Matrix: Solid** 

Sample Depth: 1.5'

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	
Toluene	< 0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	•
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 03:17	
o-Xylene	< 0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 03:17	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	111		70 - 130			10/26/22 14:13	10/29/22 03:17	
1,4-Difluorobenzene (Surr)	95		70 - 130			10/26/22 14:13	10/29/22 03:17	
Method: TAL SOP Total BTE	X - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/30/22 21:36	•
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	•
Method: SW846 8015B NM -	Diesel Range	e 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	
Diesel Range Organics (Over C10-C28)	216		49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	,
Oll Range Organics (Over C28-C36)	124		49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	86		70 - 130			10/21/22 13:00	10/21/22 19:08	
o-Terphenyl	95		70 - 130			10/21/22 13:00	10/21/22 19:08	•
Method: MCAWW 300.0 - Ar	nions, Ion Chr	omatograp	ohy - Soluble					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	263		4.99				10/23/22 21:38	

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

			Perce	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
380-20605-A-1-E MS	Matrix Spike	101	92	
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90	
390-3243-1	BH03	111	95	
CS 880-37911/1-A	Lab Control Sample	99	91	
CSD 880-37911/2-A	Lab Control Sample Dup	101	91	
/IB 880-37911/5-A	Method Blank	102	87	
1B 880-38021/5-A	Method Blank	72	60 S1-	
Surrogate Legend				
BFB = 4-Bromofluorob	enzene (Surr)			
DFBZ = 1,4-Difluorobe	nzene (Surr)			

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

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

			Percent Su	rrogate 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					

OTPH = o-Terphenyl

Job ID: 890-3243-1 Client: Ensolum Project/Site: PLU 30 Big Sinks Battery 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

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 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

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared A	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

-	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%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

LCS LCS

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

Lab Sample ID: LCSD 880-37911/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

**Analysis Batch: 38089** 

Prep Type: Total/NA Prep Batch: 37911

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

Surrogate	%Recovery	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

_	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

Lab Sample ID: 880-20605-A-1-E MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 38089							Prep Batch: 37911		
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

MS MS

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

Lab Sample ID: 880-20605-A-1-F MSD

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 37911

Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.0990 20 Benzene 0.06610 F1 70 - 130 35 <0.00201 UF1 mg/Kg 66 Toluene <0.00201 UF1 0.0990 0.06481 F1 65 70 - 130 20 35 mg/Kg 0.0990 Ethylbenzene <0.00201 UF1 0.06337 F1 mg/Kg 64 70 - 130 19 35 m-Xylene & p-Xylene <0.00402 UF1 0.198 0.1224 F1 mq/Kq 62 70 - 130 16 35 <0.00201 U 0.0990 0.07052 71 70 - 130 17 o-Xylene mg/Kg

MSD MSD

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

Lab Sample ID: MB 880-38021/5-A

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 38021

Analyte	Result	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

MB MB

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared Analy	yzed Dil Fac
4-Bromofluorobenzene (Surr)	72		70 - 130	10/27/22 13:34 10/28/2	2 13:48 1
1,4-Difluorobenzene (Surr)	60	S1-	70 - 130	10/27/22 13:34 10/28/2	2 13:48 1

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

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

Result Qualifier RL Unit Prepared Analyte Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 mg/Kg 10/21/22 07:36 10/21/22 08:48

(GRO)-C6-C10

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery 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

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 10/21/22 07:36 10/21/22 08:48 C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 10/21/22 07:36 10/21/22 08:48

MB MB

Surrogate	%Recovery 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

**Client Sample ID: Lab Control Sample** 

Lab Sample ID: LCS 880-37446/2-A

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 37444** Prep Batch: 37446 LCS LCS Spike %Rec

Added Result Qualifier Limits Analyte Unit D %Rec Gasoline Range Organics 1000 977.4 98 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 900.1 mg/Kg 90 70 - 130

C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: LCSD 880-37446/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

**Analysis Batch: 37444** 

Prep Type: Total/NA Prep Batch: 37446 LCSD LCSD %Rec **RPD** 

Spike RPD **Analyte** Added Result Qualifier Unit D %Rec Limits Limit Gasoline Range Organics 1000 1058 mg/Kg 106 70 - 130 8 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 970.9 mg/Kg 97 70 - 1308 20 C10-C28)

LCSD LCSD

Surrogate	%Recovery	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

Spike MS MS %Rec Sample Sample **Analyte** Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.8 U 998 888.0 84 70 - 130 mg/Kg (GRO)-C6-C10 <49.8 U 998 717.3 72 70 - 130 Diesel Range Organics (Over mg/Kg

C10-C28)

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	78		70 - 130

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

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

83

Lab Sample ID: 880-2057 Matrix: Solid Analysis Batch: 37444	9-A-1-D MSC					Client	Samp	ole ID: N	latrix Spil Prep Ty Prep E	pe: Tot	al/NA
•	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	84		70 - 130								

70 - 130

# Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1 Matrix: Solid Analysis Batch: 37598	- <b>A</b>					Client Sam	Prep Type: S	
	MB	MB						
Analyte	Result	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				Clie	ent Sa	mple ID	: Lab Control Sample
Matrix: Solid							Prep Type: Soluble
Analysis Batch: 37598							
-	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits

Chloride	250	259.6	mg/Kg	104	90 - 110
Lab Sample ID: LCSD 880-37511/3-A Matrix: Solid			Client Sample	e ID: Lab	Control Sample Dup Prep Type: Soluble

Analy	/sis	Batcl	h: 37	<b>'598</b>
-------	------	-------	-------	-------------

o-Terphenyl

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

Analy	ysis	Batch:	37598
-------	------	--------	-------

•	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

		_		_	
Ana	weie	Rat	ch	. 2	7598

Alialysis Datcil. 37 330											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

Date Received: 10/20/22 09:38

## **Lab Chronicle**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Client Sample ID: BH03** Lab Sample ID: 890-3243-1 Date Collected: 10/19/22 10:40

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery 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	<b>Expiration Date</b>	
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'

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10

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Page

www.xenco.com

Work Order No:

# Chain of Custody

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. Carisbad, NM (575) 988-3199 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Project Manager. Tac	Tacoma Morrissey			Bill to: (if different)	orent)	Garrett Green	•	Worl	Work Order Comments	uts	
	Ensolum			Company Name:	ame	XTO Energy		Program: UST/PST   PRP   Brownfields   RRC   Superfund	□ Brownfields	RRC Superfund	
	3122 National Parks Hwy	s Hwy		Address:		3104 E. Green St	an St.	State of Project:	2000		
City, State ZIP: Car	Carlsbad, NM 88220	0		City, State ZIP	JIP.	Carlsbad, NM 88220	A 88220	Reporting: Level II   Level III   PST/UST   TRRP	III   PST/UST	] TRRP ☐ Level IV ☐	
Phone: 303	303-887-2946		Email:	Garrell Ge	SENGER	ExxonMebil com	1	Deliverables EDD	ADaPT [	Other	
Project Name:	PLU 30 Big Sinks Battery	iks Battery	Turn	Around			ANALYS	ANALYSIS REQUEST	Pr	Preservative Codes	
Project Number:	03E1558016	3016	Routine	Rush	Pres.				None: NO	IO DI Water. H <sub>2</sub> O	
Project Location:			Due Date:		1				Cool Coo		_
Sampler's Name:	Connor Whitman	nitman	TAT starts the day received by the lab, if received by 4.30pm	day received by ived by 4:30pm				· -   -   -   -	HCL HC	HNO <sub>3</sub> HN	
CAMPI E DECEIDT	Town Blank	Nos Mo	Wat Ica	CVac No	Т				H.PO. HP	4	
Samples Received Intact:			R	100 W	) L	(0.00			NaHSO	NaHSO, NABIS	
Cooler Custody Seals:	Yes No	N/A Correction Factor	otlor.	0.0		E :A		2000 2343 Ohili of Carledo	Na <sub>2</sub> S <sub>2</sub> O	Na;S,O; NaSO,	
Sample Custody Seals:	No	A Temperature Reading:	Reading:	3.0		d3) 9		Chain of Custody	Zn Acet	Zn Acetate+NaOH, Zn	
Total Containers:		Corrected Temperature:	mperature:	3.50			1201		NaOH+	NaOH+Ascorbic Acid SAPC	$\neg$
Sample identification	ation Matrix	ha Sampled	Time	Depth G	Grab/ # of Comp Cont	снгов тън (во	) X3T8		S	Sample Comments	
BHOI	S	10/19/22	1040	1 (	-	/			Incident ID	t ID:	
									AAPP2206137	STR NATIONALISM NATIONALISM	A 1
/									Cost Center	enter:	
	/									2037891001	
		1							AFE:		
											$\neg$
			1	-144-							$\neg$
				-	1						
						/			Į.		
							7				10
Total 200.7 / 6010	200.8 / 6020:		BRCRA 13PPN		11 Al Sb	14	B Cd Ca Cr Co Cu Fe	K Se A	Ag SiO <sub>2</sub> Na Sr Ti Sn U	Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed	fetal(s) to be ans	alyzed	TCLP / SPI	P 6010: BRCRA	BRCRA	Sb As Ba Be	Be Cd Cr Co Cu Pb M	Cd Cr Co Cu Pb Mn Mo Ni Se Ag II U P	ng: 16317.245.17.1470 7.1471	1410 11411	711
Notice: Signature of this document and relinquishment of samples constitutes a valid purch of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume a of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of F85.00 will be applied to each project and a charge of \$85.00	nent and relinquishme be liable only for the charge of \$85.00 will	nt of samples consti cost of samples and be applied to each p	tules a valid purci shall not assume roject and a chary	hase order fro any responsit e of \$5 for ea	m client cor sility for any ch sample s	npany to Eurofine losses or expens ubmitted to Euro	x Xenco, its affiliates and subcont ies incurred by the client if such I fins Xenco, but not analyzed. The	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$55.00 will be applied to each project and a charge of \$5 for each asample submitted to Eurofins Xenco. But not analyzed. These terms will be sinforced unless previously nagotiated.	itions control egotiated.		
Relinquished by: (Signature)	gnature)	Received	Received by: (Signature)	(eu	-	Date/Time	Relinquished by: (Signature)	(Signature) Received by: (Signature)	(Signature)	Date/Time	
· Contitue		3000	0		٥	90-33d	13%				
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8					2		9				

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3243-1 SDG Number: 03E1558016

Login Number: 3243 **List Source: Eurofins Carlsbad** 

List Number: 1 Creator: Clifton, Cloe

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

List Source: Eurofins Midland
List Number: 2
List Creation: 10/21/22 10:46 AM

Creator: Rodriguez, Leticia

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	N/A	

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<6mm (1/4").

**Environment Testing** 

# **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

# **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

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

Revision 1

Page 2 of 23

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB
Laboratory Job ID: 890-3291-1
SDG: 03E1558016

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-3291-1 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** 

4 MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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** 

DI 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)

MCI 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)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

**TNTC** Too Numerous To Count

**Eurofins Carlsbad** 

### Case Narrative

Client: Ensolum

Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB 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.

Job ID: 890-3291-1

Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS03A** Lab Sample ID: 890-3291-1

**Matrix: Solid** 

Date Received: 10/25/22 15:17 Sample Depth: 1 feet b

Date Collected: 10/24/22 10:45

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 BT	EX - Total BTE	X Calculat	ion					
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	_	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 - D Analyte	_	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
Oll 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 - Anio	ns, Ion Chromatograph	y - 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 Lab Sample ID: 890-3291-2 Date Collected: 10/24/22 13:50 **Matrix: Solid** 

Date Received: 10/25/22 15:17

Released to Imaging: 7/15/2024 1:08:08 PM

Sample Depth: 1 feet b

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

# **Client Sample Results**

Client: Ensolum Job ID: 890-3291-1

Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS04A** Lab Sample ID: 890-3291-2 Date Collected: 10/24/22 13:50 **Matrix: Solid** Date Received: 10/25/22 15:17

Sample Depth: 1 feet b

Analyte

Chloride

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 BTE	X - Total BTE	X Calculat	ion					
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 - D	iesel 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	•	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
Oll 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

RL

4.99

Unit

mg/Kg

Prepared

Analyzed

10/30/22 09:27

Dil Fac

Result Qualifier

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

			Perc	ent Surrogate Rec
		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-Bromofluorobenze	ene (Surr)			
DFBZ = 1,4-Difluorobenzer	ne (Surr)			

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

Pren Type: Total/NA Matrix: Solid

Matrix: Solid				Prep Type: Total/NA
			Perce	ent Surrogate Recovery (Acceptance Limits)
		1001	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

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB 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	В	anl	K

**Prep Type: Total/NA** 

Prep Batch: 38099

	MB	MB					•	
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 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

MB MB

Surrogate	%Recovery 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

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Prep Batch: 38099

Prep Batch: 38099

Lab Sample ID: LCS 880-38099/1-A

Matrix: Solid

**Analysis Batch: 38214** 

•	Spike	LCS LCS			%Rec	
Analyte	Added	Result Qualifi	ier Unit	D %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	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: LCSD 880-38099/2-A **Client Sample ID: Lab Control Sample Dup** Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 38214** 

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	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

LCSD LCSD

Surrogate	%Recovery	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 II	): Matı	rix Spike
	Prep	Type:	Total/NA
		- Table 1	

Prep Batch: 38099

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

Prep Batch: 38099

# **QC Sample Results**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 880-20720-A-21-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 38214** 

•	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 880-20720-A-21-D MSD

**Matrix: Solid** 

**Analysis Batch: 38214** 

**Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA Prep Batch: 38099

Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.0990 0.06961 70 - 130 35 Benzene <0.00200 UF1 mg/Kg 70 10 Toluene <0.00200 UF1 0.0990 0.06111 F1 62 70 - 130 18 35 mg/Kg 70 - 130 Ethylbenzene <0.00200 UF1 0.0990 0.05794 F1 mg/Kg 59 29 35 m-Xylene & p-Xylene <0.00401 UF1 0.198 0.1157 F1 mg/Kg 58 70 - 130 29 35 <0.00200 UF1 0.0990 0.05577 F1 27 o-Xylene mg/Kg 56 70 - 130

MSD MSD

Surrogate	%Recovery (	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: MR 880-38024/1-4

M

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
MB MB	

Analyte	Result Qu	ualifier	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
Oll Range Organics (Over C28-C36)	<50.0 U		50.0	mg/Kg	10/27/22 13:59	10/29/22 10:00	1

MB MB

Surrogate	%Recovery C	Qualifier l	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	92	7	70 - 130	10/27/22 13:59	10/29/22 10:00	1
o-Terphenyl	103	7	70 - 130	10/27/22 13:59	10/29/22 10:00	1

Lab Sample ID: LCS 880-38024/2-A

Matrix: Solid Analysis Batch: 38137							Prep Type: To Prep Batch:	
-	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	1170		mg/Kg		117	70 - 130	
Diesel Range Organics (Over	1000	855.4		mg/Kg		86	70 - 130	

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**Client Sample ID: Lab Control Sample** 

Project/Site: PLU 30 BIG SINKS CTB

Client: Ensolum

Job ID: 890-3291-1

SDG: 03E1558016

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

Lab Sample ID: LCS 880-38024/2-A

Lab Sample ID: LCSD 880-38024/3-A

Lab Sample ID: 890-3282-A-1-C MS

Lab Sample ID: 890-3282-A-1-D MSD

**Matrix: Solid** 

**Analysis Batch: 38137** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 38024

LCS LCS

Limits %Recovery Qualifier Surrogate 1-Chlorooctane 121 70 - 130 o-Terphenyl 141 S1+ 70 - 130

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 38137** 

Prep Batch: 38024

LCSD LCSD RPD %Rec Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1233 mg/Kg 123 70 - 130 5 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 912.3 mg/Kg 91 70 - 130 6 20

C10-C28)

**Matrix: Solid** 

**Analysis Batch: 38137** 

LCSD LCSD

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 127 70 - 130 o-Terphenyl 145 S1+

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Prep Batch: 38024

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Limits **Analyte** Unit D %Rec <49.8 U Gasoline Range Organics 998 994.7 mg/Kg 98 70 - 130 (GRO)-C6-C10 <49.8 U 998 Diesel Range Organics (Over 895.0 mg/Kg 88 70 - 130

C10-C28)

MS MS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 82 o-Terphenyl 85 70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

**Analysis Batch: 38137** Prep Batch: 38024 Sample Sample Spike MSD MSD %Rec **RPD** 

Result Qualifier Added Result Qualifier Limits **RPD** Limit **Analyte** Unit %Rec <49.8 U 998 914.9 Gasoline Range Organics mg/Kg 90 70 - 130 8 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.8 U 998 1085 mg/Kg 107 70 - 130 19 20

C10-C28)

**Matrix: Solid** 

MSD MSD

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 99 70 - 130 o-Terphenyl 102 70 - 130

# **QC Sample Results**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: MB 880-38030/1-A **Client Sample ID: Method Blank Matrix: Solid Prep Type: Total/NA** Prep Batch: 38030 **Analysis Batch: 38135** 

	MB	MB						
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 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
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/27/22 15:04	10/29/22 21:37	1
	MB	MB						

	MB MB				
Surrogate	%Recovery 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 **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Total/NA Analysis Batch: 38135** Prep Batch: 38030 %Rec Spike LCS LCS

	Spike	LUS	LUS				/orec	
Analyte	Added	Result	Qualifier	Unit	D	%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	

	LCS	LUS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	110		70 - 130
o-Terphenyl	113		70 - 130

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Lab Sample ID: LCSD 880-38030/3-A			Client Sample ID: Lab Control Sample Du									
Matrix: Solid							<b>Prep Ty</b>	pe: Tot	al/NA			
Analysis Batch: 38135							Prep E	atch:	38030			
	Spike	LCSD	LCSD				%Rec		RPD			
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Gasoline Range Organics (GRO)-C6-C10	1000	811.4		mg/Kg		81	70 - 130	1	20			

Surrogate	LCSD %Recovery	Limits						
Diesel Range Organics (Over C10-C28)		1000	945.5	mg/Kg	95	70 - 130	8	2
(GRO)-C6-C10		1000	011.4	mg/kg	01	70 - 130	'	4

o-Terphenyl	103	70 - 130	
Lab Sample ID: 890-3291-1 MS			Client Sample ID: FS03A

70 - 130

Matrix: Solid									Prep Type: Total/NA
Analysis Batch: 38135									Prep Batch: 38030
	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	

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1-Chlorooctane

Client: Ensolum

Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 890-3291-1 MS Client Sample ID: FS03A

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 38135** Prep Batch: 38030

MS MS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 105 70 - 130 o-Terphenyl 175 S1+ 70 - 130

Client Sample ID: FS03A Lab Sample ID: 890-3291-1 MSD

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

Prep Batch: 38030 **Analysis Batch: 38135** 

RPD MSD MSD %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 321 998 1054 74 70 - 130 3 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 5750 998 5872 4 mg/Kg 12 70 - 130 20 C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 101 70 - 130 o-Terphenyl 169 S1+

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38007/1-A **Client Sample ID: Method Blank** 

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 38166** 

MB MB

RL Unit Analyte Result Qualifier Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 10/30/22 08:00 mg/Kg

Lab Sample ID: LCS 880-38007/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 38166** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Chloride 250 263.5 mg/Kg 105 90 - 110

Lab Sample ID: LCSD 880-38007/3-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 38166** 

Released to Imaging: 7/15/2024 1:08:08 PM

Spike LCSD LCSD %Rec **RPD** Added Limits RPD Analyte Result Qualifier Unit D %Rec Limit Chloride 250 264.0 mg/Kg 106 90 - 110 20

Lab Sample ID: 890-3286-A-1-B MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid Prep Type: Soluble Analysis Batch: 38166** 

Sample Sample Spike MS MS %Rec

Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 10600 5030 15700 90 - 110 mg/Kg 101

**Eurofins Carlsbad** 

# **QC Sample Results**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3286-A-1-C MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38166** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	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**

<b>Lab Sample ID</b> 890-3291-1	Client Sample ID FS03A	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 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

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

**Client Sample ID: FS03A** 

Date Collected: 10/24/22 10:45

Date Received: 10/25/22 15:17

SDG: 03E1558016

Lab Sample ID: 890-3291-1

**Matrix: Solid** 

Job ID: 890-3291-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-3291-2

Date Collected: 10/24/22 13:50 **Matrix: Solid** Date Received: 10/25/22 15:17

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		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

Job ID: 890-3291-1

SDG: 03E1558016

# Project/Site: PLU 30 BIG SINKS CTB **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	<b>Expiration Date</b>
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

eurofins

Project Manager

Tacoma Morrissey

Bill to: (If different)

City, State ZIP:

Carlsbad, NM 88220 3104 E Green St XTO Energy Garrett Green

Address: Company Name:

Ensolum

3122 National Parks Hwy

vddress: Company Name

13 14

# Chain of Custody

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 Houston, TX (281) 240-4200. Dallas, TX (214) 902-0300

Reporting Level III Clevel III PST/UST TRRP Level IV	State of Project:	Program: UST/PST   PRP   Brownfields   RRC   Superfund	Wor	X WWW	Work
HIII PST/	Ţ	P Brownt	<b>Work Order Comments</b>	v.xenco.com	Work Order No.
ST/UST   TRRP		leids RRC	omments	Page	
Level IV		Superfund		of _	

SAMPLE RECEIPT Sampler's Name: Samples Received Intact Project Location: Project Number: Project Name: City, State ZIP cooler Custody Seals: ircle Method(s) and Metal(s) to be analyzed ervice. 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 citent if such losses are due to circumstances beyond the control surfins 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. imple Custody Seals: Relinquished by: (Signature) Total 200.7 / 6010 e: Signature of this document and relinquishment of sample's constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions Sample Identification FS04 FS03 303-887-2946 Carlsbad, NM 88220 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 enf PLU 30 Big Sinks CTB 200.8 / 6020: Yes No Yes No (Yes) Temp Blank: Connor Whitman 03E1558016 No. Matrix (X NIA S S Correction Factor: Thermometer ID: Corrected Temperature: emperature Reading: KYes No 10/24/2022 10/24/2022 Sampled Date Received by: (Signature) BRCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr TI Sn U V Zn Due Date: Sampled Wet Ice: TAT starts the day received by the lab, if received by 4:30pm TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 10:45 1:50 Time Routine Email: Turn Around **ESONIC** Depth Rush 0.5 0.5 Yes) No 6.0-6 Comp Comp Comp Grab/ Cont # of Code 10 35:22 15 **Parameters** Date/Time CHLORIDES (EPA: 300.0) TPH (8015) BTEX (8021 Relinquished by: (Signature) 890-3291 Chain of Custody ANALYSIS REQUEST Deliverables EDD | Received by: (Signature) Hg: 1631 / 245.1 / 7470 / 7471 ADaPT L AFE Na,S,O, NaSO, H,PO, HP HCL HC Cool Coo Cost Center: NaOH+Ascorbic Acid: SAPC H2SO2 H2 Zn Acetate+NaOH: Zn NaHSO, NABIS None: NO Incident ID: Preservative Codes Sample Comments Revised Date 08/25/2020 Ray 2020 2 Other 2037891001 Date/Time МеОН: Ме NaOH Na HNO, HN Di Water H<sub>2</sub>O

# **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 890-3291-1

 SDG Number: 03E1558016

Login Number: 3291 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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 Source: Eurofins Midland** List Creation: 10/27/22 10:25 AM List Number: 2

Creator: Rodriguez, Leticia

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

ANALYTICAL REPORT

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701

**JOB DESCRIPTION** 

Generated 12/27/2022 10:05:00 AM Revision 1

PLU 30 Big Sinks Battery SDG NUMBER 03E1558016

**JOB NUMBER** 

890-3247-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

# **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

Project/Site: PLU 30 Big Sinks Battery

Client: Ensolum

Laboratory Job ID: 890-3247-1 SDG: 03E1558016

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** 

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** 

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** 

Detection Limit (DoD/DOE) DL

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DL, RA, RE, IN

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 Minimum Level (Dioxin) ML MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

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

**Eurofins Carlsbad** 

### Case Narrative

Client: Ensolum

Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery 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 Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery 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

10/21/22 13:50 10/22/22 00:39

**Matrix: Solid** 

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
n-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
Kylenes, 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
1-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

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 - D	iesel Range Organics (DI	RO) (GC)					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	8680	49.9	mg/Kg			10/24/22 09:48	1

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
Oll 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

Method: MCAWW 300	.0 - Anions, Ion Chromatograph	omatography - Soluble							
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	224	5.01	ma/Ka			10/23/22 21:42	1		

70 - 130

121

Lab Sample ID: 890-3247-2 **Client Sample ID: FS02A** Date Collected: 10/19/22 14:15 **Matrix: Solid** 

Date Received: 10/20/22 09:38 Sample Depth: 1 feet b

o-Terphenyl

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 Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery 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

Chloride

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		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 BTE	EX - Total BTE	X Calculati	ion					
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 - I	Diesel Range (	Organics (I	DRO) (GC)					
Analyte	_	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	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sasoline Range Organics	204		50.0 mg/Kg				-	Dii i uo
	204		50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
GRO)-C6-C10 Diesel Range Organics (Over	3150		50.0 50.0	mg/Kg			10/22/22 01:20	1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)				5 5		10/21/22 13:50		
GRO)-C6-C10 Diesel Range Organics (Over C10-C28) DII Range Organics (Over C28-C36)	3150		50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
GRO)-C6-C10 Diesel Range Organics (Over C10-C28) DII Range Organics (Over	3150 1730	Qualifier	50.0 50.0	mg/Kg		10/21/22 13:50 10/21/22 13:50	10/22/22 01:20	1 1
GRO)-C6-C10 Diesel Range Organics (Over C10-C28) DII Range Organics (Over C28-C36) Surrogate I-Chlorooctane	3150 1730 %Recovery	Qualifier	50.0 50.0 <i>Limits</i>	mg/Kg		10/21/22 13:50 10/21/22 13:50 <b>Prepared</b> 10/21/22 13:50	10/22/22 01:20 10/22/22 01:20 Analyzed	1 1
GRO)-C6-C10 Diesel Range Organics (Over C10-C28) DII Range Organics (Over C28-C36) Surrogate	3150 1730 %Recovery 88 92	Qualifier	50.0 50.0 Limits 70 - 130 70 - 130	mg/Kg		10/21/22 13:50 10/21/22 13:50 <b>Prepared</b> 10/21/22 13:50	10/22/22 01:20 10/22/22 01:20 <b>Analyzed</b> 10/22/22 01:20	1 1

5.00

mg/Kg

10/23/22 21:47

80.0

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3247-1
Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

			Percent	t 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 S	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 Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery 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

	MB	MR						
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 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

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared Anal	yzed Dil Fac
4-Bromofluorobenzene (Surr)	107	70 - 130	10/21/22 14:15 10/24/2	2 10:42
1 4-Difluorobenzene (Surr)	77	70 - 130	10/21/22 14:15 10/24/2	2 10:42

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

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Benzene 0.100 0.1046 mg/Kg 105 70 - 130 70 - 130 Toluene 0.100 0.1066 mg/Kg 107 0.100 0.09931 Ethylbenzene mg/Kg 99 70 - 130 m-Xylene & p-Xylene 0.200 0.2054 mg/Kg 103 70 - 130 0.100 0.1034 103 70 - 130 o-Xylene mg/Kg

LCS LCS

Surrogate	%Recovery	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

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifie	r Unit	D	%Rec	Limits	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

LCSD LCSD

Surrogate	%Recovery	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

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits <0.00201 U 0.100 0.1004 70 - 130 Benzene mg/Kg 99 Toluene <0.00201 U 0.100 0.1142 mg/Kg 109 70 - 130

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## **QC Sample Results**

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

Lab Sample ID: 890-3253-A-1-A MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 37615									Prep B	atch: 37514
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	

MS MS

Surrogate	%Recovery	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

Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene 0.0996 0.09485 70 - 130 6 35 <0.00201 U mg/Kg 94 Toluene <0.00201 U 0.0996 0.09849 94 70 - 130 35 mg/Kg 15 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 35 1 <0.00201 U 0.0996 0.1021 103 70 - 130 2 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	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

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 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
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1

MB MB

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

Lab Sample ID: LCS 880-37503/2-A

**Matrix: Solid** 

**Analysis Batch: 37444** 

				Prep Type: Total/NA
				Prep Batch: 37503
CS				%Rec
ualifier	Unit	D	%Rec	Limits

**Client Sample ID: Lab Control Sample** 

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	858.1		mg/Kg		86	70 - 130
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	774.2		mg/Kg		77	70 - 130
040,000)							

C10-C28)

**Eurofins Carlsbad** 

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery 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** 

90

Client Sample ID: Matrix Spike Duplicate

70 - 130

Prep Type: Total/NA

Prep Batch: 37503

15

LCS LCS

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

**Client Sample ID: Lab Control Sample Dup** Lab Sample ID: LCSD 880-37503/3-A

**Matrix: Solid** 

Diesel Range Organics (Over

**Prep Type: Total/NA** Prep Batch: 37503 **Analysis Batch: 37444** LCSD LCSD RPD %Rec Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1041 104 70 - 130 19 20 mg/Kg

902.2

mg/Kg

1000

C10-C28)

(GRO)-C6-C10

LCSD LCSD

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

Lab Sample ID: 890-3240-A-2-C MS **Client Sample ID: Matrix Spike Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 37444** 

Prep Batch: 37503 Sample Sample Spike MS MS %Rec

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

C10-C28)

MS MS Surrogate %Recovery Qualifier

Limits 1-Chlorooctane 70 - 130 82 o-Terphenyl 84 70 - 130

Lab Sample ID: 890-3240-A-2-D MSD

**Matrix: Solid** 

**Analysis Batch: 37444** 

Prep Batch: 37503 Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Result Qualifier Limits **RPD** Limit **Analyte** Added Unit %Rec <49.9 U 998 1014 Gasoline Range Organics mg/Kg 102 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 762.1 mg/Kg 74 70 - 130 3 20

C10-C28)

MSD MSD

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

**Eurofins Carlsbad** 

**Prep Type: Total/NA** 

20

## QC Sample Results

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

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

Chloride

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

Lab Sample ID: LCS 880-37511/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** 

**Prep Type: Soluble** 

**Analysis Batch: 37598** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 250 Chloride 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** 

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

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

**Analysis Batch: 37598** 

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

Lab Sample ID: 890-3240-A-3-D MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 37598** 

RPD Sample Sample Spike MSD MSD %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 248 1329 4 Chloride 1120 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**

Released to Imaging: 7/15/2024 1:08:08 PM

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	

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3

3

4

6

8

40

13

14

# **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

2

3

5

7

0

10

11

13

4 1

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**Client Sample ID: FS01A** 

Date Collected: 10/19/22 14:10

Date Received: 10/20/22 09:38

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

Lab Sample ID: 890-3247-1

**Matrix: Solid** 

Job ID: 890-3247-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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** Lab Sample ID: 890-3247-2 Date Collected: 10/19/22 14:15 **Matrix: Solid** 

Date Received: 10/20/22 09:38

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 Total/NA	Prep Analysis	8015NM Prep 8015B NM		1	10.01 g 1 uL	10 mL 1 uL	37503 37444	10/21/22 13:50 10/22/22 01:20		EET MID EET MID
Soluble Soluble	Leach Analysis	DI Leach 300.0		1	5 g 50 mL	50 mL 50 mL	37511 37598	10/21/22 14:12 10/23/22 21:47	KS CH	EET MID EET MID

**Laboratory References:** 

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

Released to Imaging: 7/15/2024 1:08:08 PM

# **Accreditation/Certification Summary**

Client: Ensolum

Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery 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	<b>Identification Number</b>	<b>Expiration Date</b>
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
3015B 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
3015NM 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

**Eurofins Carlsbad** 

# **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	Dej
890-3247-1	FS01A	Solid	10/19/22 14:10	10/20/22 09:38	1 feet
890-3247-2	FS02A	Solid	10/19/22 14:15	10/20/22 09:38	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) 508-3334 EL Paso, TX (915) 585-3443. Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550. Carlsbad, NM (575) 888-3199

Work Order No:

State of the Control Number   State of the State of the Control Number   State of the Control	Project Manager: Tac	Tacoma Morrissey			Bill to: (if different)		Garrett Green	nen		1	Wor	Work Order Comments	nents	200 0
State of Project:   State of Project:   State of Project:   Reporting Level III   PSTIJST   Reporting Level III   PSTIJST   Reporting Level III   PSTIJST   Reporting Level III   PSTIJST   Programment of the project   PSTIJST		olum			Company Nan	-30	TO Energ	9		Prograr		P  Brownfields	8 RRC	Superfund
Carisbad NM 89220   Carisbad NM 89220   Deliverables; EDD   ANALYSIS REQUEST   Deliverables; EDD   ANALYSIS REQUEST   None NG Gard Version of Carisbad NM 89220   Code Code Code Code Code Code Code Code	88	2 National Park	s Hwy	100	Address	67	104 E. Gr	een St		State of	Project:	//(	1	
Deliverables: EDD   ADaPT		Isbad, NM 8822	02		City. State ZIP	100	arlsbad. 1	VM 88220		Reportir	g Level II   Leve	IIII 🗌 PST/UST	TRRP.	Level IV
ANALYSIS REQUEST   Pre-   ANALYSIS REQUEST   Pre-   ANALYSIS REQUEST   None NG     Analysis Request     Analysis Reduction     Analysis Remains     Analys		-887-2946		Email:	Garrell Grass	n@Exator	Mobil of	m		Delivera	bles: EDD	ADaPT L	Other	
Code Cod	Project Name:	PLU 30 Big Sir	nks Battery	Turn					ANALYSIS	REQUEST		4	Preservati	re Codes
day received by vee No control of the Control of th	Project Number:	03E155	8016	N Routine	Rush	Pres.						None	ON	DI Water H <sub>2</sub> O
Area No  Topoth  Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mig Mn Mo Ni K Se Ag SiO, Na Sr Ti  The state of the more part of be Electrical by received by; (Signature)  10 - Dot-20-32-33	Project Location:			Due Date:								Cool	Cool	MeOH: Me
Ves No fee of the composition of	Sampler's Name:	Connor W	hitman	TAT starts the	day received by				_	_	-	HCL	9	HNO, HIN
Ves No  An incident  Series 1 Al Se As Ba Be B Cd Cr Co Cu Pe Mm Mo Ni Se Ag Ti U Hg. 1631/245.177  Texas 11 Al Se As Ba Be B Cd Cr Co Cu Pe Mm Mo Ni Se Ag Ti U Hg. 1631/245.177  An responsibility for any loses a creamers by the clean it such loses are due to circumstances beyond the control of the contro	PO#.			the lab, if rec	eived by 4:30pm	su	1412			ALIMAN STATE OF THE STATE OF TH		H2504	, H	NaOH Na
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Depth Comp Cont C E E E E E E E E E E E E E E E E E E	Sample Custody Seals:	No.		Reading:			43) \$	//S	890-3247 Chain	of Custody		Zn Ace	zetate+NaO	Zu Zu
Depth Grabi # of E E E E E E E E E E E E E E E E E E	Total Containers:		Corrected Te	mperature:				1208	-	-	-	HOEN	4+Ascorbic	cid SAPC
Incident  S. C. II.  ATEXAST 1 AI SD AS BA BE BC CC CC CU Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr TI.  LP 6010: SRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U Hg. 1631/245.1/7  Any responsibility for my loss or expenses incurred by the client is and subcontraction. It assigns standard terms and conditions  any responsibility for my responses incurred by the client is authority negotiated.  ID Date/Time  Relinquished by: (Signature)  Received by: (Signature)	Sample Identifica		- 20	Time		/ # of Cont	100000	s) X3T8				6)	Sample Co	stuemm
A Texas 11 AI Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl  LP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg.1631/245.1/7  Lase order from client company to Euroffins Amero, its affiliates and subcontractor. It assigns standard ferms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control are of 55 for each sample submitted to Euroffins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.  ID : Qo 2073 3	F50/A	8		2:10	,5, 6	-	1					Incide	ent ID:	
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Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl  LP 6010: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631/245.1/7  Nase order from client company to Eurofins Xanco, its affiliates and subcontractor. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control pe of 55 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.    10 - 20 - 23 - 35   4   4   4   4   4   4   4   4   4	/											Cost (	Center:	
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A Texas 11 AI Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti  LP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631/245.1/7  Nate order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyonds the control of the con												AFE		
The Texas 11 All Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl.  LP 6010: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631/245.1/7  Nate order from client company to Euroffins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control is of \$5 for each sample submitted to Euroffins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.  IO : 200: 209:38			/				H							
A Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl  LP 6010: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg. 1631/245.1/7  Nate order from client company to Euroffins Xenco, its affiliates and subcontractor. It assigns standard forms and conditions any leases or expenses incurred by the client if such losses are due to circumstances beyond the control pe of 35 for each sample submitted to Euroffins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.    Do: Dote/Time   Relinquished by: (Signature)   Received by: (Signature)			/	La-17	4									
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A Texas 11 AI Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti.  LP 6010: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631/245.1/7  Nate order from client company to Eurofins Xenco, its affiliates and subcontraction. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control pe of 15 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously regoldsted.    O : Dot 20 23 93   4   4   4   4   4   4   4   4   4							1							
LP 6010: BRCRA Sb As Ba Be Cd Ca Cr Co Cu Pb Mn Mo Ni Se Ag SiO <sub>2</sub> Na Sr TI  LP 6010: BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631/245.1/7  Nase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client it such losses are due to circumstances beyond the control is of 35 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously regolated.  IO - 20 - 23 - 23 - 3 - 4  6  6  6								1						
LP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631/245.1/7  Tass order from client company to Eurofins Xenco, its affiliates and subcontraction. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control part of 55 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.    Date/Time	Total 200.7 / 6010	200.8 / 6020:		(G)	-	S	Ba	œ	Ca Cr Co Cu	Pb Mg	Se /	SiO <sub>2</sub> Na Sr	TI Sn U	uz /
The order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control pe of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.    Date/Time   Relinquished by: (Signature)   Received by: (Signature)	Circle Method(s) and N	fetal(s) to be an	alyzed	TCLP / SP		- 11	b As Ba	Be Cd	Cr Co Cu Pb Mn	Mo Ni Se A		lg: 1631 / 245.1	1/7470/	471
ure)	Notice: Signature of this docur of service: Eurofins Xenco will of Eurofins Xenco. A minimum	nent and relinquishmy be liable only for the charge of \$85.00 will	ent of samples cons cost of samples and be applied to each	itutes a valid puro shall not assume project and a char	hase order from any responsibilit ge of \$5 for each	ifient compa y for any los sample sub	ny to Euro ses or exp mitted to Es	ins Xenco, it mess incurre molins Xenco	s affiliates and subcontrac of by the client if such loss ,, but not analyzed. These	tors. It assigns stues are due to circu terms will be enfor	indard terms and con imstances beyond the cod unless previously	ditions control negotiated.		
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## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3247-1 SDG Number: 03E1558016

Login Number: 3247 **List Source: Eurofins Carlsbad** 

List Number: 1

Creator: Stutzman, Amanda

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 campered 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	
s 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	

**Eurofins Carlsbad** 

Released to Imaging: 7/15/2024 1:08:08 PM

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3247-1

SDG Number: 03E1558016

List Source: Eurofins Midland
List Number: 2
List Creation: 10/21/22 10:46 AM

Creator: Rodriguez, Leticia

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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APPENDIX D

**NMOCD Notifications** 

From: <u>Green, Garrett J</u>
To: <u>Tacoma Morrissey</u>

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: <u>Collins, Melanie</u>

To: <u>DelawareSpills /SM</u>; <u>Green, Garrett J</u>; <u>Pennington, Shelby G</u>

Cc: <u>Ashley Ager</u>; <u>Kalei Jennings</u>; <u>Tacoma Morrissey</u>; <u>Ben Belill</u>; <u>Stuart Hyde</u>

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

**Date:** Tuesday, September 6, 2022 1:18:20 PM

Attachments: <u>image001.png</u>

#### [\*\*EXTERNAL EMAIL\*\*]

And the 3<sup>rd</sup> one arrived..released 3/19/22.

## Melanie Collins



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
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729



**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.

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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
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

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

in f 💆

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
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: <u>Collins, Melanie</u>

To: <u>DelawareSpills /SM</u>; <u>Green, Garrett J</u>; <u>Pennington, Shelby G</u>

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: <u>image001.png</u>

#### [\*\*EXTERNAL EMAIL\*\*]

And the 3<sup>rd</sup> one arrived..released 3/19/22.

## Melanie Collins



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: <a href="mailto:ocd.enviro@emnrd.nm.gov">ocd.enviro@emnrd.nm.gov</a>; <a href="mailto:Bratcher">Bratcher</a>, <a href="mailto:Michael</a>, <a href="mailto:EMNRD">EMNRD</a>; <a href="mailto:Hamlet</a>, <a href="mailto:Robert</a>, <a href="mailto:EMNRD">EMNRD</a>; <a href="mailto:Hamlet</a>, <a href="mailto:Board</a>, <a href="mailto:Hamlet</a>, <a href="mailto:Board</a>, <a href="mailto:Bamlet</a>, <a href="mailto:Bamle

Cc: <u>Tacoma Morrissey</u>; <u>DelawareSpills /SM</u>

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: <u>Green, Garrett J</u>
To: <u>Tacoma Morrissey</u>

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: <u>Collins, Melanie</u>

To: <u>Tacoma Morrissey</u>; <u>Ashley Ager</u>; <u>Ben Belill</u>

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: <u>image001.png</u>

#### [ \*\*EXTERNAL EMAIL\*\*]

Deferral Denial for PLU 30 BS TB released 2/24/22 --- Deferral was submitted 3/6/23.

# Melanie Collins



**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: <u>Collins, Melanie</u>

Tacoma Morrissey; Ashley Ager; Ben Belill

Cc: <u>Green, Garrett J; DelawareSpills /SM; Pennington, Shelby G</u>

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193699

**Date:** Tuesday, July 11, 2023 3:20:07 PM

Attachments: <u>image001.png</u>

#### [ \*\*EXTERNAL EMAIL\*\*]

Another PLU 30 BS denial, from the multi-incident report. Release date is 3/14/22.

# Melanie Collins



**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: <u>Collins, Melanie</u>

To: <u>Tacoma Morrissey</u>; <u>Ben Belill</u>; <u>Ashley Ager</u>

Cc: <u>DelawareSpills /SM; Green, Garrett J; Pennington, Shelby G</u>

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193710

**Date:** Friday, June 30, 2023 8:00:12 AM

Attachments: <u>image001.png</u>

#### [ \*\*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



APPENDIX C

Photographic Log



#### **Photographic Log**

XTO Energy, Inc PLU 30 Big Sinks Battery naPP2209137379, nAPP2208351954, nAPP2206853301





Description: Soil staining within the release extent.

View: North



Photograph: 2 Date: 5/2/2022

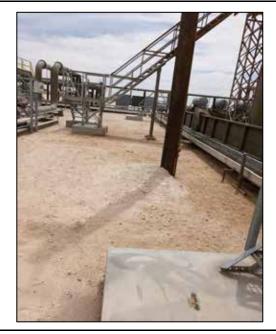
Description: Liner inspection activities.

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.

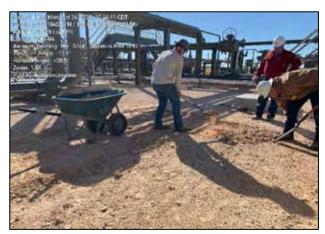
View: South.



#### **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



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

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# **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



# **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**

Generated 2/13/2024 12:22:15 PM

Authorized for release by Jessica Kramer, Project Manager <u>Jessica.Kramer@et.eurofinsus.com</u> (432)704-5440

Project/Site: PLU 30 BIG SINKS BATTERY

Client: Ensolum

Laboratory Job ID: 890-6096-1 SDG: 03C1558016

**Table of Contents** 

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### **Definitions/Glossary**

Job ID: 890-6096-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY 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. 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. Indicates the analyte was analyzed for but not detected. U

HPLC/IC

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

**Glossary** 

%R

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

**CFL** Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

Percent Recovery

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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

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** 

Presumptive **PRES** QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

Relative Percent Difference, a measure of the relative difference between two points RPD

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TFO

**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
- 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 Job ID: 890-6096-1
Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

Client Sample ID: SW01 Lab Sample ID: 890-6096-1

Date Collected: 02/01/24 10:50

Matrix: Solid

Date Received: 02/01/24 14:43

Sample Depth: 0-1

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	
Toluene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	•
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	,
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 07:21	
o-Xylene	0.00251		0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	,
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 07:21	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	321	S1+	70 - 130			02/11/24 13:30	02/13/24 07:21	
1,4-Difluorobenzene (Surr)	100		70 - 130			02/11/24 13:30	02/13/24 07:21	1
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/13/24 07:21	•
Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<248	U	248	mg/Kg			02/11/24 21:36	•
Method: SW846 8015B NM - Dies	sel Range Orga	nics (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	Ę
Diesel Range Organics (Over C10-C28)	<248	U	248	mg/Kg		02/06/24 16:51	02/11/24 21:36	Ę
Oll Range Organics (Over C28-C36)	<248	U	248	mg/Kg		02/06/24 16:51	02/11/24 21:36	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	0.4	S1-	70 - 130			02/06/24 16:51	02/11/24 21:36	
o-Terphenyl	2	S1-	70 - 130			02/06/24 16:51	02/11/24 21:36	
Method: EPA 300.0 - Anions, Ion	Chromatograp	hy - Solubl	e					
Analyte	Popult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	Qualifier		Onit		riepaieu	Allalyzeu	Dii Fat

Client Sample ID: SW02

Date Collected: 02/01/24 11:05

Lab Sample ID: 890-6096-2

Matrix: Solid

Date Received: 02/01/24 14:43

Sample Depth: 0-1

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

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# **Client Sample Results**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SW02** Lab Sample ID: 890-6096-2

Date Collected: 02/01/24 11:05 Matrix: Solid Date Received: 02/01/24 14:43

Sample Depth: 0-1

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 - 1	Total BTEX Cald	culation						
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 - Diese	el Range Organ	ics (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 - Dies	sel Range Orga	nics (DRO)	(GC)					
Analyte	•	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	<50.5	U F1	50.5	mg/Kg		02/06/24 16:51	02/11/24 20:26	1
C10-C28)								
Oll 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
	0.4	S1-	70 - 130			02/06/24 16:51	02/11/24 20:26	

4.97 **Client Sample ID: SS03** Lab Sample ID: 890-6096-3

RL

Unit

mg/Kg

mg/Kg

D

Prepared

Analyzed

02/06/24 22:40

Result Qualifier

95.9

50.3

Date Collected: 02/01/24 11:15 Date Received: 02/01/24 14:43

Sample Depth: 0.5

Analyte

Chloride

**Total TPH** 

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 Cald	culation						
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 - Die	esel Range Organ	ics (DRO) (	GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

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02/11/24 21:58

49.7

Dil Fac

**Matrix: Solid** 

Job ID: 890-6096-1

Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS03** Lab Sample ID: 890-6096-3

Date Collected: 02/01/24 11:15 Matrix: Solid Date Received: 02/01/24 14:43

Sample Depth: 0.5

Method: SW846 8015B NM - Dies	el Range Orga	nics (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
Oll Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	,
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	Chromatograp	hy - Solubl	e					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	83.8		4.95	mg/Kg			02/06/24 22:46	1

Lab Sample ID: 890-6096-4 **Client Sample ID: SS04** Date Collected: 02/01/24 11:20 Matrix: Solid

Date Received: 02/01/24 14:43

Sample Depth: 0.5

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 - 1	otal BTEX Cald	culation						
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 - Diese	I Range Organ	ics (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 - Dies	sel Range Orga	nics (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
Oll 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

Method: TAL SOP Total BTEX - Total BTEX Calculation

Result Qualifier

<0.00399 U

Job ID: 890-6096-1

SDG: 03C1558016

**Client Sample ID: SS04** Lab Sample ID: 890-6096-4 Date Collected: 02/01/24 11:20

Matrix: Solid

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 Date Collected: 02/01/24 11:25

Analyzed

02/13/24 08:43

Date Received: 02/01/24 14:43

**Matrix: Solid** 

Sample Depth: 0.5

Analyte

Total BTEX

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: CW04C 004E NM Dice	al Banna Orman	ine (DDO) (C(	2)					
Method: SW846 8015 NM - Dies Analyte	•	Qualifier	<b>√)</b> RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	201		50.0	mg/Kg			02/11/24 22:43	1
Method: SW846 8015B NM - Die	sel Range Orga	nics (DRO) (0	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Casalina Banga Organica	<50.0	П	50.0	ma/Ka		02/06/24 16:51	02/11/24 22:43	1

RL

0.00399

Unit

mg/Kg

D

Prepared

	·C6-C10	100.0	O	00.0	mg/rtg	02/00/24 10.01	02/11/24 22:40	
, ,	Range Organics (Over	201		50.0	mg/Kg	02/06/24 16:51	02/11/24 22:43	1
	nge Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg	02/06/24 16:51	02/11/24 22:43	1
Surrog	ate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1-Chlor	rooctane	96		70 - 130		02/06/24 16:51	02/11/24 22:43	1
o-Terph	nenyl	96		70 - 130		02/06/24 16:51	02/11/24 22:43	1

Method: EPA 300.0 - Anions, Ion	<b>Chromatography - Soluble</b>						
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	102	5.05	mg/Kg			02/06/24 23:00	1

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Released to Imaging: 7/15/2024 1:08:08 PM

Dil Fac

Job ID: 890-6096-1

Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS06** Lab Sample ID: 890-6096-6 Date Collected: 02/01/24 11:30

Matrix: Solid

Date Received: 02/01/24 14:43 Sample Depth: 0.5

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 - 1	Total BTEX Cald	culation						
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 - Diese	•		•	Unit	В	Dropored	Analyzad	Dil Eoo
	•	ics (DRO) ((	GC)	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	•	Qualifier	•	Unit mg/Kg	D	Prepared	<b>Analyzed</b> 02/11/24 23:05	
Analyte Total TPH	<b>Result</b> <49.6	Qualifier U	<b>RL</b> 49.6		D	Prepared		
Analyte Total TPH  Method: SW846 8015B NM - Die:	Result <49.6	Qualifier U	<b>RL</b> 49.6		<u>D</u>	Prepared Prepared		1
Analyte Total TPH Method: SW846 8015B NM - Die: Analyte	Result <49.6	Qualifier Unics (DRO) Qualifier	RL 49.6 (GC)	mg/Kg			02/11/24 23:05	Dil Fac
Analyte	Result <49.6 sel Range Orga Result	Qualifier Unics (DRO) Qualifier	RL 49.6 (GC)	mg/Kg		Prepared	02/11/24 23:05  Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <49.6 sel Range Orga Result	Qualifier U  nics (DRO) Qualifier U	RL 49.6 (GC)	mg/Kg		Prepared	02/11/24 23:05  Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <49.6  sel Range Orga Result <49.6  <49.6	Qualifier U  nics (DRO) Qualifier U	RL 49.6  (GC)  RL 49.6  49.6	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <49.6  sel Range Orga Result <49.6	Qualifier U  nics (DRO) Qualifier U	RL 49.6  (GC)  RL 49.6	mg/Kg  Unit  mg/Kg		Prepared 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <49.6  sel Range Orga Result <49.6 <49.6 <49.6  %Recovery	Qualifier U  nics (DRO) Qualifier U  U	RL 49.6 (GC) RL 49.6 49.6 49.6	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51 Prepared	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05 Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <49.6	Qualifier U  nics (DRO) Qualifier U  U	RL 49.6 (GC) RL 49.6 49.6	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05	Dil Face 1 1 1 Dil Face
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result <49.6  sel Range Orga Result <49.6 <49.6 <49.6  %Recovery	Qualifier U  nics (DRO) Qualifier U  U	RL 49.6 (GC) RL 49.6 49.6 49.6	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51 Prepared	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05 Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result   <49.6	Qualifier U  nics (DRO) Qualifier U  U  Qualifier	RL 49.6 (GC) RL 49.6 49.6 49.6 Limits 70 - 130 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51  Prepared 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05  Analyzed 02/11/24 23:05	Dil Face 1 Dil Face 1 Dil Face 1
Analyte Total TPH  Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result <49.6  sel Range Orga Result <49.6 <49.6 <49.6  %Recovery 121 123  1 Chromatograp	Qualifier U  nics (DRO) Qualifier U  U  Qualifier	RL 49.6 (GC) RL 49.6 49.6 49.6 Limits 70 - 130 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51  Prepared 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05  Analyzed 02/11/24 23:05	

**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

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 Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS07** 

Result Qualifier

76.7

Lab Sample ID: 890-6096-7 Date Collected: 02/01/24 11:35 Matrix: Solid

Date Received: 02/01/24 14:43 Sample Depth: 0.5

Analyte

Chloride

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 - 1	Total BTEX Cald	culation						
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 - Diese	el Range Organ	ics (DRO) (	GC)					
Analyte		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 - Die	sel Range Orga	nics (DRO)	(GC)					
Analyte	•	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	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
C10-C28)								
OII Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Surrogate			70 - 130			02/06/24 16:51	02/11/24 23:26	1
Surrogate 1-Chlorooctane	90		70 - 750					

RL

5.01

Unit

mg/Kg

D

Prepared

Analyzed

02/06/24 23:27

Dil Fac

# **Surrogate Summary**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
90-6096-1	SW01	321 S1+	100	
90-6096-2	SW02	106	124	
90-6096-3	SS03	114	121	
90-6096-4	SS04	115	130	
90-6096-5	SS05	112	116	
90-6096-6	SS06	113	116	
90-6096-7	SS07	159 S1+	125	
90-6102-A-6-C MS	Matrix Spike	103	107	
90-6102-A-6-D MSD	Matrix Spike Duplicate	105	106	
CS 880-72821/1-A	Lab Control Sample	102	101	
CSD 880-72821/2-A	Lab Control Sample Dup	95	99	
1B 880-72821/5-A	Method Blank	127	130	
1B 880-72837/5-A	Method Blank	118	122	
Surrogate Legend				
BFB = 4-Bromofluorober	nzene (Surr)			
DFBZ = 1,4-Difluorobena	zene (Surr)			

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

Prep Type: Total/NA Matrix: Solid

iatrixi oona				
				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 Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY 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

	MB	MR						
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 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

MB MB

Surrogate	%Recovery 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

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.09626 mg/Kg 96 70 - 130 Toluene 0.100 0.09713 mg/Kg 97 70 - 130 0.100 0.08842 Ethylbenzene mg/Kg 88 70 - 130 0.200 0.2090 104 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.09157 70 - 130 o-Xylene mg/Kg 92

LCS LCS

Surrogate	%Recovery Qualif	ier 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

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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-Xvlene	0.100	0.08994		ma/Ka		90	70 - 130	2	35

LCSD LCSD

Surrogate	%Recovery Qual	ifier 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

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

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Prep Batch: 72821

# QC Sample Results

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

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

Lab Sample ID: 890-6102-A-6-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 72835

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	103	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: 890-6102-A-6-D MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Solid** 

m-Xylene & p-Xylene

o-Xylene

**Analysis Batch: 72835** 

Prep Batch: 72821 Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier %Rec RPD Limit Analyte Unit Limits 0.0990 Benzene <0.00200 UF1 0.06864 F1 mg/Kg 69 70 - 130 35 0.0990 0.06759 F1 70 - 130 Toluene <0.00200 UF1 mg/Kg 68 35 Ethylbenzene <0.00200 UF1 0.0990 0.06441 F1 65 70 - 130 35 mg/Kg <0.00401 U 0.198 0.1530 77 70 - 130 35

0.06881 F1

0.0990

mq/Kq

mg/Kg

MSD MSD

<0.00200 UF1

Surrogate	%Recovery Qualifi	ier 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

70 - 130

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Analyte	Result	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

MB MB

MB MB

Surrogate	%Recovery	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

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 02/06/24 16:51 02/11/24 19:18 mg/Kg

(GRO)-C6-C10

# QC Sample Results

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY 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	Result	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
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1

MB MB

MR MR

Surrogate	%Recovery	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 **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Analysis Batch: 72814

Prep Type: Total/NA

Prep Batch: 72531

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 1019 70 - 130 mg/Kg 102 (GRO)-C6-C10 1000 1033 103 Diesel Range Organics (Over mg/Kg 70 - 130C10-C28)

LCS LCS

Surrogate	%Recovery 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

Analysis Batch: 72814

Client Sample ID: Lab C	ontrol Sample Dup
P	Prep Type: Total/NA

Prep Batch: 72531

Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier Limits RPD Limit Unit %Rec Gasoline Range Organics 1000 903.6 90 70 - 130 mg/Kg 12 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 932.7 mg/Kg 93 70 - 130 10 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	101		70 - 130

Lab Sample ID: 890-6096-2 MS Client Sample ID: SW02 **Matrix: Solid** 

Prep Type: Total/NA

Prep Batch: 72531 Sample Sample Spike MS MS %Rec

Result Qualifier Added Result Qualifier Unit %Rec Analyte <50.5 U F1 1010 <50.4 U F1 2 Gasoline Range Organics 70 - 130mg/Kg (GRO)-C6-C10 1010 70 - 130 Diesel Range Organics (Over <50.5 U F1 <50.4 U F1 mg/Kg -0.1

C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 0.9 S1-70 - 130 0.3 S1-70 - 130 o-Terphenyl

Prep Batch: 72531

## QC Sample Results

Job ID: 890-6096-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY 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

Sample Sample Spike MSD MSD RPD RPD Limit Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics <50.5 U F1 1010 <50.4 UF1 mg/Kg 2 70 - 130 6 20 (GRO)-C6-C10 Diesel Range Organics (Over <50.5 U F1 1010 0.1 70 - 130<50.4 U F1 mg/Kg a 20

C10-C28)

MSD MSD

%Recovery Qualifier Limits Surrogate 2 S1-70 - 130 1-Chlorooctane 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 **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 72467** 

MB MB

Result Qualifier RL Unit Analyte D Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 mg/Kg 02/06/24 21:05

Lab Sample ID: LCS 880-72305/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 72467** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %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** 

**Analysis Batch: 72467** 

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit %Rec Limits RPD Limit 250 254.3 90 - 110 Chloride mg/Kg 102 0 20

Lab Sample ID: 890-6096-5 MS

**Matrix: Solid** 

**Analysis Batch: 72467** 

Sample Sample Spike MS MS %Rec Result Qualifier Added Limits Analyte Result Qualifier Unit D %Rec 253 90 - 110 Chloride 102 368.0 mg/Kg 105

Lab Sample ID: 890-6096-5 MSD

Matrix: Solid

**Analysis Batch: 72467** 

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added RPD Analyte Result Qualifier Limits Limit Unit %Rec 253 365.8 Chloride 102 mg/Kg 104 90 - 11020

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**Prep Type: Soluble** 

**Client Sample ID: SS05** 

**Client Sample ID: SS05** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

# **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 Batcl
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	

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# **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 Batc
890-6096-1	SW01	Soluble	Solid	DI Leach	
890-6096-2	SW02	Soluble	Solid	DI Leach	
390-6096-3	SS03	Soluble	Solid	DI Leach	
390-6096-4	SS04	Soluble	Solid	DI Leach	
890-6096-5	SS05	Soluble	Solid	DI Leach	
390-6096-6	SS06	Soluble	Solid	DI Leach	
390-6096-7	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	
390-6096-5 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

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Project/Site: PLU 30 BIG SINKS BATTERY

Client Sample ID: SW01

Client: Ensolum

Date Collected: 02/01/24 10:50 Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:33	CH	EET MID

Client Sample ID: SW02 Lab Sample ID: 890-6096-2

Date Collected: 02/01/24 11:05 Date Received: 02/01/24 14:43

Matrix: Solid

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep Total/NA 5035 4.99 g 5 mL 72821 02/11/24 13:30 MNR **EET MID** Total/NA 8021B 5 mL 72835 02/13/24 07:42 **EET MID** Analysis 1 5 mL MNR Total/NA Total BTEX 73053 02/13/24 07:42 Analysis 1 SM **EET MID** Total/NA Analysis 8015 NM 72975 02/11/24 20:26 SM **EET MID** Total/NA 9.90 g 72531 02/06/24 16:51 EET MID Prep 8015NM Prep 10 mL TKC Total/NA Analysis 8015B NM 1 uL 1 uL 72814 02/11/24 20:26 SM **EET MID** 72305 Soluble 02/04/24 12:41 Leach DI Leach 5.03 g 50 mL CH **EET MID** Soluble Analysis 300.0 72467 02/06/24 22:40 СН **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** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

Lab Sample ID: 890-6096-4 **Client Sample ID: SS04** Date Collected: 02/01/24 11:20 Matrix: Solid

Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

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

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:53	CH	EET MID

Lab Sample ID: 890-6096-5

Matrix: Solid

Date Collected: 02/01/24 11:25 Date Received: 02/01/24 14:43

**Client Sample ID: SS05** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:00	CH	EET MID

Lab Sample ID: 890-6096-6 **Client Sample ID: SS06** 

Date Collected: 02/01/24 11:30 **Matrix: Solid** Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	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	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:20	CH	EET MID

**Client Sample ID: SS07** Lab Sample ID: 890-6096-7

Date Collected: 02/01/24 11:35 Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	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

**Eurofins Carlsbad** 

Released to Imaging: 7/15/2024 1:08:08 PM

**Matrix: Solid** 

### **Lab Chronicle**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS07** Lab Sample ID: 890-6096-7

Date Collected: 02/01/24 11:35 Matrix: Solid Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	72305	02/04/24 12:41	СН	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	ry Program		Identification Number	<b>Expiration Date</b>
Texas	NELA	Р	T104704400-23-26	06-30-24
The following analytes	are included in this report, bu	it the laboratory is not certif	fied by the governing authority. This lis	t mav include analytes
0 ,	• •	·····, ·····, ······		
for which the agency do	oes not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte	
0 ,		Matrix Solid	Analyte Total TPH	

2

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14

# **Method Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1

SDG: 03C1558016

tory	

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

Order Comments    Brownfields   RRC   Sc   Brownfields   RRC   Sc   Brownfields   RRC   Sc   AbaPT   Other   None: NO DIV   Cool: Cool Nec    Hcl.: Hc HNK   HgPOd: HP NaCO; NABIS   Nage, Hg NaCO; NABIS   Nage, Hg NaCO; NABIS   Nage, Hg NaCO; NABIS   Nage, Hg NaCO; HP NaPOZOCOSS318   Nage, Hg NaCO; HP NaCO; HP NaCO; HP NaCO; HP NaCO; NABIS   Nage, Hg NaCO; N	Parust   TRRP   Substitute	seurofins 💸	-	Environment Testing Xenco	esting	2	Houston, diamd, TX L Passo,	TX (261) (432) 704 X (915) 5	40-4200, 40-4200, 55-3443, Lu	CRAIN OF CUSTODY  Housion, TX (281) 240-4200, Datas, TX (214) 902-0300 Middend, TX (432) 704-5440, San Antonio, TX (210) 509-3334  EL Preso, TX (915) 885-3443, Lubbook, TX (809) 794-1286	3000 9-3334 1296	Work Order No:	er No:	
Order Comments    Brownfields   RRC   St.     Brownfields   RRC   St.     AbaPT   Other     AbaPT   Other     Nane. NO DIV     Cool. Cool   Med. HW     H,PO.c. HP   Nat     Nat   St. TI   Sn U V Zn     AFE:   203789100     AFE:   203789100     AFE:   AFE:   AFE:     Afe:   Detertified     Afe:   Afe:   Afe:     Afe:   Afe:     Afe:   Afe:   Afe:     Af	Order Com  Brownheit  Brownheit  Cool  Hypo  Hypo  Nach  AFE:  AFFE:						N SOCIAL	10,500	a	Start MA (525) 983	D T	4C		1 00
Brownfields RRC S  ADBPT Other  Preservative C  ADBPT Other  None: NO DIV  Cool: Cool Med  HyPOz: HP  NaHSOz: Hp  NaHSOz: NABIS  NaScio; Hp  NaHSOz: Hp  NaCH+Ascorbic Acid.  Sample Comm  Incident ID:  APP22085319  AAFE:  203789100  AFE:  AFE:  AFE:  AFE:  AFE:  AAFE:	Brownfields RRC S  AbaPT Other  Preservative (  None: NO DIV Cool: Cool Med HCL: HC HNW HSO4: H2 NaCO Na25,03: NaSO3, Zn Aceistes NaOH-Zn NaOH+Ascorbic Acid. Sample Comm Incident ID: NAPPZ2091373 NAPPZ2091373 AAPPZ2093589 Cost Center. 203789100 AFE: AFE: AFE: AAFE: AAFE		coma Morrisse	ry.		Bill to: (if diff	erent)	Garre	t Green			Work	Order Comments	5
Abert   Other    None: No Div Cool: Cool: Cool: Cool Net HyPO.: HP NaCL: HC HXI NaCH+Ascorbic Acid: Sample Comm NaCH+Ascorbic Acid: Sample Comm NaCH+Ascorbic Acid: Na	ADept D other  None: NO DIV Cool: Cool Med Hypoz: HP NaHSoz: HP NaHSoz: HP NaHSoz: NaSoy Zn Aceistet NaOH-2Ascorbic Acid Sample Comm Nays, Oy: NaSoy Zn Aceistet NaOH-2Ascorbic Acid APPRZO68539 APPRZO685399 APPR		solum			Company N	ame:	XTO	nergy		4	gram: UST/PST   PRP	Brownfields   BBC	
ADAPT Cother  ADAPT Cother  None: NO DIV COO! Cool Med Hypo.: HP NaHSO.: NABIS NA_SO.: NABIS NA_SO.: NABIS NA_SO.: NABIS NA_SO.: NABIS NAPPZ2091373 AAPPZ2091373 AAPPZ2093519 Incident ID: NAPPZ2091373 AAPPZ20955319 AAPPZ20955319 AAPPZ20955319 AAPE: AAPPZ20955319 AAPE: AAPATATATATATATATATATATATATATATATATATAT	ADEPT Cother  Preservative ( None: NO DIV COO!: Cool Med Hy, Do.; HP NaHSO.; NABIS NA, S.O.; NASO.; Zn. Acetates NaOH, Zn NaCH+Ascorbic Acid Sample Comm Incident ID: APP22063519 APP22063	-	22 National Pa	rks Hwy		Address		3104	Green S		StS	le of Project:		
ADBPT Cother:  Preservative ( None: NO DIV Cool: Cool Med HyDoz: HP NaHSOz: HP NaHSOz: HP NaHSOz: NABIS NaySyOz: NASOz Zn Acetater Comm APPZZ069559 APPZZ069599 APPZZ0695999 APPZZ069599 A	ADBPT Cother:  Preservative ( None: NO DIV Cool: Cool Med HyPOz: HP NaHSOz: NaSOz Zn Acetaterhao H.Zn NaOH+Ascorbic Acid: Sample Comm NaOH+Ascorbic Acid: Sample Comm APPZZ008531973 nAPPZZ008531973 nAPPZZ0085319 nAPPZZ008531973 nAPPZZ0085319 n		rlsbad, NM 88.	220		City, State 2	JP.	Carts	ad, NM 88	220	8	ociting: Level II   Level III	☐ PST/UST ☐ TRRP	
Preservatii None: NO Cool: Cool Hct. Hc Hg/So <sub>4</sub> : Hg Hg/So <sub>4</sub> : Hg Hg/So <sub>4</sub> : Hg NaHSO <sub>4</sub> : NaSO <sub>5</sub> Zo Aceintea Na OH NaOH+Ascorbic A Sample Cool NaOH+Ascorbic A Sample Cool NaOH-Ascorbic A Sample Cool	Preservatii None: NO Cool: Cool Hct. Hc H <sub>2</sub> So <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> Po <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> Po <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> Po <sub>4</sub> : H <sub>3</sub> Na <sub>3</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Aceintea Na OH NaOH+Ascorbic A Sample Co Incident ID: NAPP22083 NAPP22083 AAPP22083 AA		3-837-2946		Email	E Garrett.Gn	BRUGE	ownwoo	fl.com		Del	iverables: EDD	ADaPT Cother	
None: NO Cool: Cool Hy, Do, Hy Na, So, Hy Hy, Po, Hy NaH So,: NABIS Nay, So, NABIS NAPP 22081 NAP	None: No Cool: Cool Hy, So <sub>4</sub> : Hy Hy, Po <sub>4</sub> : Hy NaHSO <sub>4</sub> : NaSO <sub>5</sub> NaCht-Ascorbic A Sample Co Incident IO: NAPP22083	Project Name:	PLU 30 Big	Sinks Battery	Tur	n Around				ANA	A YSIS REDITE	13		
Cool: Cool Cool: Cool HCL. HC H-SO4: H-P NaHSO4: N-P N	Cool: Cool Cool: Cool HCL. HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NaSO <sub>3</sub> Zo Acetate±NaOH NaOH+NaCortic A NaOH+NaCortic A NaOH+NaCortic A Sample Co Incident ID: AAPP22081 AAPP22083 A	Project Number:	03C15	58016	✓ Routine		Cod	7.6					None NO	TWO Codes
HCL. HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : H <sub>2</sub> NaHSO <sub>4</sub> : NaSO <sub>3</sub> Zn Aceister MaO NaOH+Ascorbic A Sample Co Sample Co Incident ID: NAPP2208 N	HCL. HC H2SQ, H2 H3SQ, H3 H3SQ, H3 NaHSQ, NaSQ, Zn Acstatet MaOH NaOH+Ascortic A Sample Co Incident ID: Incid	Project Location:			Oue Date:								Conf. Conf.	Manager Und
531/2 Na signal nature	S31/2	Sampler's Name:	Cannor	Whitman	TAT starts the	he day received	à						HCL: HC	HNO3: HN
S31/2	Dy Na Marked Mature	SAMPLE RECEIPT	Temp Blan		-	document of the second	100	- 1					H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	NaOH: Na
S S S S S S S S S S S S S S S S S S S	Dy Na Marked Marked	Samples Received Infact	F		- 1	S S	Т	0.00					H,PO4: HP	
531/2 Martine	531/2 mature	Cooler Custody Seais:		N/A] Correction	Factor.	200		300					NaHSO <sub>4</sub> : NABIS	
531/2 Martine	531/2 831/2 mature	Sample Custody Seals	Yes No	N/A Femperatu	re Reading.	13	Т	<b>∀</b> d∃/					Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : Na <sub>5</sub> O <sub>3</sub>	
531/2 wared	S31/2 Nature	Total Containers:		Corrected .	remperature:	11 21	H	\$30	+				Zn Apelate+MaO	HZn Age pane
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203 AFE: D <sub>2</sub> Na Sr TI Sn L 831/245.1/7470	203 AFE: D <sub>2</sub> Na Sr Ti Sn U 531/245.1/7470 aned	Cool		-	1120	2 '	+						Cost Center	
AFE: D <sub>2</sub> Na Sr TI Sn L 831/245.1/7470	AFE: D, Na Sr Ti Sn U 531/245.1/7470 ared	222		1	(12)	?	+						203789	1001
531/245.1/7470 anned.	2) Na Sr Ti Sn U 531/245.1/7470 ared	3206		-	1130	5.								
SRCRA 13PPM Texas 11 Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn L  TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni K Se Ag Ti U Hg: 1631 / 245.1 / 7470  TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470  Amples and shall not secure any responsibility for any bases or experies incurred by the cleral fisher hosses are due to circumstances beyond the correct and a charpe of \$1 or each semple authoritied to Euroffins Some, but not enabyzed. These terms will be enforced unless previously negatiated.  Received by, (Signature)  Received by, (Signature)  Received by, (Signature)	2) Na Sr Ti Sn L 831/245.1/7470 aned mature)	2307		>	1135		+							
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8317.245.177470 al arted.	531/245.1/7470 aned mature)	Total 200.7 / 6010 Circle Method(s) and Me	200.8 / 6020 etal(s) to be an		RCRA 13PP TCLP / SP	M Texas 11	AI S	As Bi	Be B (	0 0 0 0 0	u Fe Pb Mg M	X Se /	Na Sr Ti Sn U V	Z
Date/Time Relinquished by, (Signature) Received by, (Signature)	Date/Time Relinquished by, (Signature) Received by, (Signature)	Notice: Signature of this docum of service. Eurofins Xonce will b of Eurofins Xonce. A minimum of	ent and retinguishen to Sable only for the tharge of \$35.00 will	ent of samples con- cost of samples and be applied to each	abutes a valid pure dishall not assume project and a chan	hase order from any responsibility go of \$5 for each	client con ty for any sample s	parry to En	rofins Xeso spenses inc Eurofins Xe	i, its affiliates and subs red by the client if sur co, but not analyzed,	ch losses are due to c These forms will be en	Ag 11 O 19, 12 standard terms and conditions freemances beyond the correct forced unless previously mondal	331/245.1/7470 /7	12.1
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# **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 890-6096-1

 SDG Number: 03C1558016

Login Number: 6096 List Source: Eurofins Carlsbad

List Number: 1

Creator: Lopez, Abraham

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	

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4.0

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# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-6096-1 SDG Number: 03C1558016

Login Number: 6096 **List Source: Eurofins Midland** List Number: 2 List Creation: 02/05/24 08:29 AM

Creator: Rodriguez, Leticia

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	N/A	

<6mm (1/4").

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# **State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505**

QUESTIONS

Action 359716

### **QUESTIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

### QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2206853301
Incident Name	NAPP2206853301 PLU 30 BIG SINKS BATTERY @ 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 BATTERY
Date Release Discovered	02/24/2022
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   Dump Valve   Crude Oil   Released: 99 BBL   Recovered: 99 BBL   Lost: 0 BBL.	
Produced Water Released (bbls) Details	Not answered.	
Is the concentration of chloride in the produced water >10,000 mg/l	Not answered.	
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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**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

QUESTIONS, Page 2

Action 359716

QUEST	IONS (continued)
Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)
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 Degrapes	
Initial Response	and the board district would are will be intime.
The responsible party must undertake the following actions immediately unless they could create a	T
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.
	flation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative o eted or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of evaluation in the follow-up C-141 submission.
to report and/or file certain release notifications and perform corrective actions for rele the OCD does not relieve the operator of liability should their operations have failed to	knowledge and understand that pursuant to OCD rules and regulations all operators are required tasses which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface rt does not relieve the operator of responsibility for compliance with any other federal, state, or
Lhereby garge and sign off to the above statement	Name: Amy Ruth Title: Coordinator SSHE Environmental

Email: amy.ruth@exxonmobil.com

Date: 06/28/2024

I hereby agree and sign off to the above statement

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# **State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505**

QUESTIONS, Page 3

Action 359716

**QUESTIONS** (continued)

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
	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 provide	ed 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 comp which includes the anticipated timelines for beginning and completing the remediation.	pleted efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC,	
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	d 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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# State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. Santa Fe, NM 87505

QUESTIONS, Page 4

Action 359716

**QUESTIONS** (continued)

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
	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.

Released to Imaging: 7/15/2024 1:08:08 PM

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**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

QUESTIONS, Page 5

Action 359716

**QUESTIONS** (continued)

Operator.	OGRID.
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
	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 o	f 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
equipment would cause major racinty deconstruction	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
	inalely under or around production equipment such as production tanks, wellheads and pipelines where In may be deferred with division written approval until the equipment is removed during other operations, or when
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 exhibit includes the anticipated timelines for beginning and completing the remediation.	fforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC
to report and/or file certain release notifications and perform corrective actions for release the OCD does not relieve the operator of liability should their operations have failed to	knowledge and understand that pursuant to OCD rules and regulations all operators are required asses which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal, state, or
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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**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

QUESTIONS, Page 6

Action 359716

<b>QUESTIONS</b>	(continued)

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
l l	Action Type:
l l	[C-141] Deferral Request C-141 (C-141-v-Deferral)

### QUESTIONS

Sampling Event Information		
Last sampling notification (C-141N) recorded	308063	
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	

Rei	Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.		emediation steps have been completed.
F	Requesting a remediation closure approval with this submission	No

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**State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. **Santa Fe, NM 87505** 

CONDITIONS

Action 359716

### **CONDITIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359716
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

### CONDITIONS

Create	ed By	Condition	Condition Date
crys	tal.walker	Deferral is approved for designated deferral area depicted on Figure 4 of Application 359716. 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